RELATIONSHIP OF HEIGHT AND WEIGHT WITH AGILITY AND LEG EXPLOSIVE STRENGTH OF INTER COLLEGE LEVEL WOMEN BASKET BALL PLAYERS

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ABSTRACT

The performance of basketball player very much depends upon heredity of the players such as their height, genotype etc and their training age especially refers to their agility and explosive strength. In the present study scholars studied the relationship of height and weight with agility and leg explosive strength of women basketball players. The study was conducted on forty eight women basketball players of Khalsa college for Women, Civil Lines Ludhiana, Government college for Girls Ludhiana, Guru Gobind Singh khalsa college for girls Sector -26 and Post Graduate Government College for Girls Sector-11, Chandigarh who has qualify for inter college league tournament during Panjab University inter college basketball competition for the session 2016-17 held at Panjab University campus Chandigarh. The obtained data was analyzed through descriptive analysis and Pearson Product Moment Coefficient of Correlation statistical technique. The result of the present study indicate significant relationship between height with agility and weight with agility and leg explosive strength both among women basketball players

Keywords : *Agility, Leg explosive Strength & Basket ball players.*

Introduction

High performance is recently coined terminology popular in sport science. It refers to performance in athletics, which is top class and at the level of the accepted international standards. The expression high performance may be misleading as it may conveys the sense of top class performance at different levels of participation; it may be so in regard to competitive sports within specific age group such as sub-junior, junior and senior for girl and boys both. Acquisition of high performance requires lot of efforts and constant training and practice. It require lot of efforts and constant training and practice which may be improve the performance level of the athletes, there are many factors which need concentration and exploration with changing dimensions of competitive sports. These factors may include physical fitness, psychological preparation, sociological aspects, physiology, anatomical and kinesiology fitness along with application enough mechanical principles of the physics. Though all these factors are equally important for the excellence of sports performance, yet, physical fitness has the dominance over others.

Therefore all the coaches and trainers

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try their best to improve the fitness level of their athletes. Specifically the game of basketball which is the concerns of the researcher has become highly scientific and needs top class fitness of the players to show better performance in the competitions. Physical fitness is a very wide term which needs different things to different people. According to Clark (1976), 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 pursuits and to meet enforcing emergencies. He further explains physical fitness as the ability to bear up to withstand stress and to preserve under difficult circumstance, where an unfit person would quit. Physical fitness is more than "being well" or "not being sick" and extends on a scale from "abundant life" to death.

Apart from the physical proves of the basketball players, anatomical and kinesiological matching of the player is equally important to take full advantage of the physical fitness potentials of the basketball players. It is universally accepted that taller players have an edge over short height players in basketball. Therefore, taller players with better physical fitness will decidedly show better performance in case of factors being equal.

As leg explosive strength and agility are two vital components in the game of basketball which motivated the researcher to determine the relationship of height and weight with leg explosive strength and agility. Therefore he present study was entitled as "Relationship of height and weight with agility and leg explosive strength of inter college level basketball players"

Objective of the study

1. To find out the relationship between height with agility and leg explosive strength among inter college level women basketball players
2. To find out the relationship between weight with agility and leg explosive strength among inter college level women basketball players

Hypotheses of the study

1. There will be significant relationship between height with agility and leg explosive strength among inter college level women basketball players
2. There will be significant relationship between weight with agility and leg explosive strength among inter college level women basketball players

Methodology and procedure

The study was conducted on forty eight women basketball players of Khalsa college for Women, Civil Lines Ludhiana, Government college for Girls Ludhiana, Guru Gobind Singh khalsa college for girls Sector -26 and Post Graduate Government College for Girls Sector-11, Chandigarh who has qualify for inter college league tournament

during Panjab

University inter college basketball competition for the session 2016-17 held at Panjab University campus Chandigarh. The obtained data was analyzed through descriptive analysis and Pearson Product Moment Coefficient of Correlation statistical technique

The required data was collected on following variables

1. Height: Through Stadiometer in inches
2. Weight: Through electronic Weighing machine in kilograms
3. Agility: Shuttle run
4. Leg Explosive strength: Sargent Jump (Vertical Jump)

Results and Discussion

The obtained data was statistically analyzed on coefficient of Correlation with the help of Pearson Product Coefficient of Correlation Statistical Technique to find out the relationship of height and weight with agility and explosive strength of Panjab University inter college level women basketball players

Table -1 : Coefficient of correlation between height and agility among inter college women basketball players

Sr. No	Variable	Mean	SD	'r'
1.	Height (Mt.)	1.582	0.167	-0.36*
2.	Agility(Sec.)	12.22	0.73	

Significant at 5% level of confidence .228 (df=46)

Table -1 show the correlation between height and agility of inter college level women basketball players. The mean and Standard Deviation of height and agility was 12.22 and 0.167 in case of height and 12.22 and 0.73 in case of agility, whereas coefficient of correlation between height and agility was -0.36 which was found significant at 5% level of confidence, because obtained 'r' (0.36) value was greater than the required 'r' table value i.e. 0.288 with 46 degree of freedom

Discussion

There are various evidence in the literature which indicates that people with shorter height are more agile than the tall person. In case of inter college level women basketball players of various colleges of Panjab university a negative correlation was found between height and agility, which show that tall players are less agile than short height players. Mechanically speaking the bony leverage of short height people has short

leverage resulting greater

angular velocity around the joints which helps them in performing quick movements of bending, stretching and changing directions. On the other hand tall players comparatively find less angular velocity around the joints to perform the movements. The principle apply in the present case of women basketball player also which is supported by the negative correlation between height and agility studied in the present study.

Table -2 : Coefficient of correlation between height and leg explosive strength among inter college women basketball players

Sr. No	Variable	Mean	SD	'r'
1.	Height (Mts.)	1.582	0.167	0.15
2.	Leg Explosive Strength (Mts.)	.332	0.046	

Significant at 5% level of confidence .228 (df=46)

Table -2 show the correlation between height and leg explosive strength of inter college level women basketball players. The mean and Standard Deviation of height was 1.582 and 0.167 respectively. The mean and standard deviation of leg explosive was . 332 and 0.046 respectively, the coefficient of correlation between height and leg explosive strength was 0.15 which was not significant at 5% level of confidence, because obtained 'r' (0.15) value was lesser than the required 'r' table value i.e. 0.288 with a 46 degree of freedom

Discussion

In the present system of basketball game all the players have to be equally matured to play from all the places in the game. In well balanced basketball team every player is expected to be good in defense, rebounding and shooting. Therefore, the leg muscles of all the players are involved in uniform type of movements. Under the circumstance, the leg muscles of all the players get uniform type of exercise and develop uniformly irrespective of their height. That is why the result also does not show any significant correlation between height and leg explosive strength.

Table -3 : Coefficient of correlation between weight and agility among inter college women basketball players

Sr. No	Variable	Mean	SD	'r'
1.	Weight (Kgs.)	46.52	11.99	-0.49*
2.	Agility(Sec.)	12.22	0.73	

Significant at 5% level of confidence .228 (df=46)

Table -3 shows the correlation between weight and agility of inter college level women basketball players. The mean and Standard Deviation of weight was 46.52 and 11.99 respectively. The mean and standard deviation of agility was 12.22 and 0.73 respectively, The coefficient of correlation between weight and agility was -0.49 which was to be statistically significant at 5% level of confidence, because obtained 'r' (-0.49) value was greater than the required 'r' table value i.e. 0.288 with a 46 degree of freedom

Discussion

It is accepted fact that heavy people are sluggish and find difficult. The same is good with the women inter college level basketball player of Panjab university. As the result have shown statistically significant negative correlation between the two variable, which prove beyond any doubt that the players with more weight give poor time on the agility test whereas the players with lightly weight give better time in the athletic language. Ordinarily in the laymen language the player with more weight consumed more time on the agility test as compared to the light weight basketball players.

Table -4 : Coefficient of correlation between Weight and leg explosive Strength among inter college women basketball players

Sr. No	Variable	Mean	SD	'r'
1.	Weight (Kgs.)	46.52	11.99	-0.5*
2.	Leg Explosive Strength (inch.)	.332	0.046	

Significant at 5% level of confidence .228 (df=46)

Table -3 shows the correlation between weight and leg explosive strength of inter college level women basketball players. The mean and Standard Deviation of weight was
46.52 and 11.99 respectively. The mean and standard deviation of leg explosive strength was .332 and 0.046 respectively, The coefficient of correlation between weight and agility was -0.5 which was to be statistically significant at 5% level of confidence, because obtained 'r' (-0.5) value was greater than the required 'r' table value i.e. 0.288 with a 46 degree of freedom

Discussion

The results of relationship between weight and leg explosive strength of inter college level women basketball players of Panjab university have been found to be statistically

significant at 5% level of confidence but this correlation is reflecting negative relation between the weight and leg explosive strength. Physiologically speaking is ratio proportionally required

for the equal proportion of the weight or resistance. That means if the resistance is more the more and more strength is required to overcome the resistance as against the lesser resistance is overcome by lesser strength. The result also proves that the players having more weight find it difficult have better jumping height as compared to the light weight basketball players. So far, by explosive strength of basketball players is concerned, they have been less variation as proved in table No-2. Only weight is the causative factor which resulting poor jumping height on the strength jump test, resulting into the negative correlation between the two variables

Implication of the Study

The finding of the study shows that coaches and trainer must concentrate on appropriate training methodology to achieved appropriate weight of their trainee because heavier the player body lesser will be the agility and explosive strength and vice versa

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