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Research Article

A STUDY ON THE CO-RELATION OF BASKET BALL PLAYING ABILITY WITH MOTOR FITNESS ANDHEALTH RELATED FITNESS OF FEMALES

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Abstract

The purpose of the present study is to investigate co-relation of basketball playing abilitywith motor fitness and health related fitness of female basketball players. The sample for the present study consists of n=100 women high standard (university players) and low standard players (intercollegiate players). Were selected from various colleges affiliated of Osmania university in Telangana state, India and their age ranged between 18 and 23 years. The subjects had past played experience of at least one year in basketball and only those who represented their respective college teams were taken as subjects. Test were conducted in standing broad jump test to measure the explosive strength (motor fitness) 600mts run to measure the cardio respiratory endurance (health related fitness) and dribbling to measure the playing ability (performance ability) it is concluded that high standard (university players) has great efficiency in motor fitness health related fitness and playing ability than low standard players (inter collegiate players).

Keyword: motor fitness, health related fitness, playing ability, performance ability.

I Introduction

Basketball is a game of skill. But it's also a game of athletic ability and movement. To be a good player, not only do you have to know the game and have good basketball skills, but you also have to be extremely agile. Improving your ability to move quickly around the court and you'll be a better player. The game is all about movement: whether it's driving by a player on offense, sliding to defend a dribbler, or going after a loose ball increasing your quickness and agility gives you an edge over the opponent. Basketball seems to be one of the most physically and emotionally involved games as suggested by different sport professional personal. A basketball player requires good physique, efficient respiratory capacity and obviouslyexcellent skills of the game. Basketball made its way into India through the American missionaries during 1920's but we were not able to make much headway as far as international competition is concerned, probably because of lack of facilities, advance scientific coaching and above all it requires physical, physiological conditioning, accurate physique, body composition and mastery in skills. Correct learning is possible only when the learner has adequate facilities of related sport. The peak performance of a player in basketball is reflected through his level oftactical, technical, motor and physical abilities during high-ranking competitions. By making useof improved sports facilities, intellectually trained coaches, proper motivation and self-interest followed by education and deep understanding, one can learn better technique, effectively

Perform the tactics and attain a high status of required physical fitness but mostly within the genetic limits. The peak performance of a player in basketball is reflected through his level of tactical, technical, motor and physical abilities during high-ranking competitions. By making use of improved sports facilities, intellectually trained coaches, proper motivation and self-interest followed by education and deep understanding, one can learn better technique, effectively perform the tactics and attain a high status of required physical fitness but mostly within the genetic limits. Common goals of competitive collegiate basketball programs are to identify, recruit, and enrol players who possess a high level of basketball playing ability (bpa), while also improving these players bpa with the most effective conditioning methods and techniques. Consequently, identifying factors associated with the highest levels of bpa is imperative. However,due to large part of varying methodologies employed in previous studies, factors associated withbpa have yet to be clearly identified. The factors that were looked at varied widely from anthropometric measures (e.g., weight, height), to performance measures (e.g., vertical jump, legpower), to basketball specific measures (e.g., playing time, skills tests). Individuals were qualified as having greater bpa by: 1) playing college basketball as opposed to being a non- athlete; 2) being a starter as opposed to a non-starter; or 3) being one of the five players withthe most minutes played as opposed to the rest of the team.

Allen anderson et al., (2001) performed a prospective study based on the hypothesis that physiologic differences exist between men and women in strength after adjustments for body weight; that the size of the anterior cruciate ligament is proportionate to the strength of its antagonists, the quadriceps muscles; and those women have a relatively small anterior cruciateligament, thus predisposing them to a disproportionate number of anterior cruciate ligament injuries. One hundred matched high school basketball players, 50 male and 50 females, were evaluated with anthropometric measurements, body fat analysis, muscle strength evaluation, and magnetic resonance imaging measurements of the inter condylar notch and cross-sectional area of the anterior cruciate ligament at the outlet. The male players were taller and heavier than their female counterparts, although they had 11% less body fat. Male players had statistically greater quadriceps and hamstring muscle strength than female players, even when adjustments were made for body weight. With adjustments for body weight, the size of the anterior cruciateligament in girls was found to be statistically smaller than in boys. There was no statistically significant difference in the notch width index between the sexes. The study data support our hypothesis that sex differences in anterior cruciate ligament tear rates are caused primarily by several interrelated intrinsic factors. Most importantly, stiffness and muscular strength increase stress on the anterior cruciate ligament in female athletes. The anterior cruciate ligament, whenadjustments have been made for body weight, is smaller in female athletes, and therefore, probably does not compensate for the lack of stiffness and strength.

Ben abdelkrim et al., (2010) examined the demands of competitive basketball games and to study the relationship between athletes' physical capability and game performance. Physical andphysiological game demands and the association of relevant field test with game performance were examined in 18 male junior basketball players. Computerized time-motion analysis, heart rate (hr), and blood-lactate concentration [bl] measurements were performed during 6 basketballgames. Players were also measured for explosive power, speed, agility, and maximal-strength and endurance performance. This study showed that basketball players experience fatigue as game time progresses and suggests the potential benefit of aerobic and agility conditioning in junior basketball

Kaplan, et al., (2009) determined the running speed and agility performance by playing positions. The sample included 108 professional male soccer players at the national level and 79 amateur male soccer players at a regional level on teams from 10 clubs in turkey. The study involved the players being assessed by the 10- x 5-m shuttle run test (10 x 5 srt) on a soccer field in a soccer season. In conclusion, professional soccer players' running speed and agility performances are higher than amateur soccer players. In addition, these results indicate that all soccer players have the same running speed and agility performance in accordance with their different playing positions. Coaches should consider individual training programs based on the positional role of soccer players.

II methodology

The purpose of the present study is to investigate co-relation of basketball playing ability with motor fitness and health related fitness of female basketball players. The sample for the present study consists of n=100 women high standard (university players) and low standard players (intercollegiate players). Were selected from various colleges affiliated of Osmania university in Telangana state, India and their age ranged between 18 and 23 years.

Sampling techniques

The affiliated college basketball teams under Osmania university which participated in the inter collegiate women basketball tournament were selected as sample. Hence the study area (jurisdiction) was the colleges of Osmania university which were selected as a sample for this study. The selected populations of the study were 100 inter collegiate women basketball players of Osmania university

Selection of subjects

One hundred women inter collegiate basketball players were selected from various colleges affiliated of Osmania university in Telangana state, India and their age ranged between 18 and 23 years. The subjects had past played experience of at least one year in basketball and only those who represented their respective college teams were taken as subjects.

Selection of variables and tests

Motor fitness component were measured by the following test, leg explosive strength assessed by standing broad jump.

The health-related parameter namely cardiovascular endurance was measured by 600mts run.

Performance evaluation

The criterion variables like playing ability of the selected basketball players were assessed by three qualified basketball coaches, which was taken as the performance factor. The guidelines for assessment were provided by the investigator. Each coach rated the playing ability of the selected players in 10 points scale for each subject. The ratings given by the coaches on each subject were added and divided by three to make the individual score of the subject. The correlation between the coaches on the performance ratings was highly correlated (r=0.87). Model was calculated, as well as correlation of all variables in the system, and finally, the interpretation of the results has been done to arrive at the results.

Tools used

Collection of data

The investigator administered the physical, physiological and performance skill tests to measure the criterion variables to n=100 inter collegiate women basketball participants of Osmania university. The investigator collected the data from the subjects before their matches during their special coaching camp and inter collegiate tournament. The purpose of the study was clearly explained by the investigator to the subjects. Care was taken to see that the subjects put in the maximum effort. The data of physical, physiological and performance skill testfrom the participants were collected after checking all the items and the total test scores obtained by each subject were tabulated.

Explosive power (standing broad jump test)

purpose

The purpose of the standing broad jump was to measure the ability to exert maximum energyin one explosive act projecting the body through space to cover more horizontal distance.

Cardio-respiratory endurance- 600mts

Purpose: the distance run test was used to measure maximum functional capacity andendurance of the cardio-respiratory system.

Dribbling (control dribble)

Purpose: to measure skill in handling the ball while the body is moving

III Results and Discussion

Table-01 indicating multiple regressions r values of all variables among 100 students.

Variables		R	R²	Se	Coefficient	T	P
Motor related variables							
	Standing broad jump	85	7	29.05	-9.75	-0.84	<0.05 sig
Health related variables							
	600mts run	13	18	28.8	7.87	1.34	<0.05 not sig
Performance variables							
	Dribbling	83	6	29.05	-0.16	-0.82	<0.05sig

Table 01 above table shows the relationship between subjects and the variables of physical, physiological and performance.

Standing broad jump: relationship between explosive strength and basketball players was significantly correlated r=0.20 p<=0.05level. The r^2 was the determination covariance between independent and dependent variable. Dependent variable influenced 7% on independent variable. The standard error was 29.05viability from the dependent variable. The t (99) -9.75 600mts run: relationship between cardiovascular endurance and basketball players was not significantly correlated r=0.20 p<=0.05level the r^2 was the determination covariance between independent anddependent variable. Dependent variable influenced the 18% on independent variable. The standarderror was 28.80viability from the dependent variable. The t (99)1.34 was not significant at p<0.05level.

dribbling: relationship between dribbling and basketball players was significantly correlated r=0.20 p<=0.05level. The r^2 was the determination covariance between independent and dependent variable. Dependent variable influenced the 6% on independent variable. The standard error was 29.05viability from the dependent variable. The t (99) -0.82 was significant at p<0.05 level. Was significant at p<0.05 level.
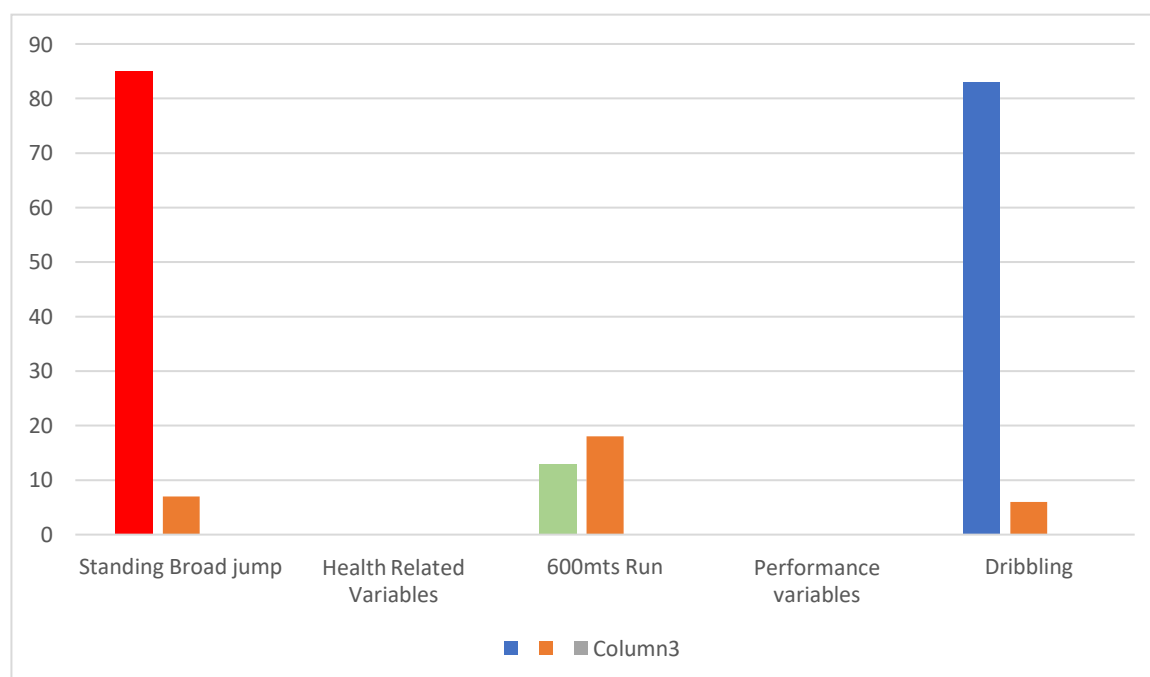
Above graph shows the relationship between subjects and the variables of physical, physiologicaland performance. The red color bars represent the physical variables in which explosive powerhad higher relationship with playing ability. The green bars represent the physiological variables components 600mts cardio respiratory has less correlated with playing ability. The blue color bars represent the performance variables component the dribbling had higher relationship with playing ability

1V Conclusion

As for the practicality of this study which investigate the programmed for young basketball female players, i clearly mention that university players have great efficiency in motor fitness, health related fitness and playing ability than low standard players (inter collegiate players). Coaches will be able to analyzed the results and be able to enhance the future performances. At such feedback is very crucial for the improvement in performance athlete. I concluded the assessment process can be conducted every 3 months and 6 months to update the progress of players performance and to ensure that it is up to date with the plyers training needs

Requirements. It is recommended that coaches assess their player's performance on a regular basis in order to ensure better compliance with the training programme. The aim to investigate co-relation of basketball playing ability with motor fitness and health related fitness of femalebasketball players to betterment and enhance their performance as well as guide line for basketball coaches at various level in preparing and designing quality and effective training programme.

V Recommendations

1. Based on the results of this study it is recommended to incorporate more performance variable tests so that it can help to concentrate for better screening and selecting outstanding basketball players at all levels.

2. Further, it is also recommended that apart from motor and health related variables the psychological variables too should be included.

3. Since basketball consists of variety of individual and collective skills that are executed inthe competitive match physical and physiological factors are not sufficient, hence in addition to this assessment of technique, tactics and strategies also should be taken upin future studies.

4. This apart, professionals should utilize these results in framing various methods of trainingfor enhancement of performance in the game of basketball.

5. The scholar also suggests that the similar research can be undertaken by deleting negativethings and adding positive things on men subjects.

VI Acknowledgement

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