CHAPTER - I

INTRODUCTION

Sports' training is a large laboratory for the preparation of the right psychophysical condition of the individuals. Games and sports have assumed multi-dimensional significance and it is better understood today than before. Games and sports is an integral component of our society. They are entering into one of the most exciting eras in its history. The fitness movement, the emphasis on preventive medicine, the increased specialization of the field etc through the application of scientific knowledge and the broadening of games and sports to reach all segments of the population are some of the significant development in the field of sports and games today.

In the world of competition, every effort is being made to train the individuals, so that it gives the best performance in the competition. The performance of the players of a particular country in international sports competition, especially in Olympics and world cup is a matter of great pride for their respective countries. According to Renewas (1972) “Performance is a very note of all the sports its basic principles as the sports has become prestigious aspect to prove one's superiority over others”.

Preponderance of scientific evidence obtained from different investigations has revealed that high level of performance depends upon various factors like, somatic, physiological, anthropometrics variables and psychological factors. Hence, there is a need to pay attention upon these factors, which are main predictors of sports performance. Countries leading in sports, such as America, Russia, Germany, china etc are using well developed scientific systems of training for their players and teams over a period of several years, but India is in cross roads. Though it has developed and improved to considerable extent yet much is desired to be achieved.
Gandhi (1982) said that outstanding performance in sports activities, after revival of the modern Olympics, has witnessed the result of the scientific approach adopted by the physical education and sports personals. She had rightly said that science applied to sport has enabled modern youth to develop physical capacities beyond anything earlier imagined. As a result, sports have become highly competitive and records are being broken at an increasing rate.

Basketball has been called international sports. There is hardly a corner on the earth where people of all ages and both sex have not been attracted by this game of fast movement, amazing accuracy and sometimes thrilling extraordinary finishes.

Basketball game is a combination of masterful skills and aesthetic body movement. The experts in the field believe that marked changes and advancement in the game's technique and tactics as well as multivariate strategies is the outcome of scientific approach. They suggest that the game should be segregated into different components for individualized training and then combined together to give peak performance.

Basket ball players have an essential need, skillfulness, change of speed, sense and direction, passing ability, rebounding ability and shot must be carried out with the ball, a tool which is not easy to handle. For that a high degree of motor abilities like, strength, anaerobic and aerobic endurance, agility, speed of movement, reaction time, explosive power, flexibility etc are the essential qualities required to be developed by the basket ball players. Moontsir (1978) expressed that the basketball game demands, highly skilled player with the maximum physical conditioning. Today basketballers put them self through vigorous and varied training programs to meet the demands of the game.

In modern basketball trends, most of the teams are used to playing higher speed basketball and it depends primarily on speed and quickness. Practice without high speed, the ball handling drills and fast breaks drills has become very difficult to excel in the high level of performance during the game without errors and turnovers.
Barrow and Mc Gee (1979) say that agility plays an important role in physical activities and it is revealed to a great extent in sports and games involving efficient footwork and quick change in body position such as in basketball, football, tennis etc.

According to Schaafsma (1966) mentioned that cardio-vascular endurance is one of the major physical fitness component required for the game of basketball as it involved continuous movement and actions with or without the ball, over a longer period of time.

Jagger (1971) views that running, jumping stopping and pivoting impose a considerable amount of strain on legs and feet muscle and therefore increasing strength program is most essential in basketball training.

Various studies in the field of basketball revealed that motor fitness plays a significant role in performance even if the team consists of highly skilled, technically sound and experienced players. Haag and singer (1979) are the opinion that superb physical fitness and the best training of an individual ultimately help in achieving high performance.

The importance of motor fitness is described in these words that “motor fitness and competitive performance go hand in hand with athleticism”. Superb fitness level is a pre requisite in training for competitive basketball.

Apart from the above motor fitness evaluations, motor skill is also very important factor in basketball playing ability. Each phase of skill development is related to the fulfillment of concrete tactical tasks that can arise in the game. Performance in basketball requires high degree of skill proficiency in passing, shooting, dribbling, rebounding etc. So, we can say that the skills are the soul of the game from technical, tactical and strategical point of view.

As the nature of the game somebody once said “when the going get tough, the tough get going” to avoid a breakdown of skill like missing an easy shot, throwing a bad pass or losing your opposing player in defense etc under
the pressure of a competition game situation, require intensive training and experience in realistic and game conditions.

Singer (1975) explains that motor skill is a muscular movement or motion of the body required for the successful execution of a desired act. Motor does imply movement. Various processes like cognitive, perceptual, effective and motor interact so that the act may be integrated meaningfully and successfully. It is an important to realize that the presence of these factors is necessary to almost any skilled performance. Motor skill includes the functional performance of sports skill. Sports skill comprises of more complex, co-ordinate or specialized abilities associated with particular sports. A game of basketball requires high proficiency in its various skills such as shooting, dribbling, passing, rebounding etc., which should be learnt and mastered so as it give an outstanding performance.

Various basketball skill tests have been constructed in past 60 years for schoolboys and girls as well as for adult men and women (Johnson 1934; Young and Moses 1937, Dyer et-al. 1939, Leilich 1952 etc.) For evaluating the performance in basketball and for spotting and nurturing the players.

There is a great relationship between motor fitness and motor skill with basketball playing ability, because without adequate level of motor fitness of a player, level of motor skill acquisition will be limited. As a result the level of performance will be impeded.

To get outstanding performance at international level right selection becomes more and more important during long-term training of basketballers. Correct solution of this problem greatly determines level of sports excellence of the Nation's at international scenario.

High result in contemporary sports long way towards top performance and many other reasons determine the necessity of organizing the talent search at an early age. Fundamental research on spot selection (i.e. Zaporozhaevov (1993), N.J Bulgakova (1996), M.S. Bril (1980) enable to formulate the methodology of
sports selection and to improve motor fitness and motor skill level during training and also act as a performance predictor.

Motto (1977) stated that performance depends upon inherited characteristics like height, speed and limb length. The establishment of such factors become all the more important, he further suggests that there is an optimal age for testing of various physical characteristics, as there are certain age when development reaches at a stage where trend is predictable e.g. adult level agility is reached around 12-14 years with little development after that, speed of movements which depends on central nervous system functions mature at around fourteen years, but running speed can still be improved, especially by change in stride length, with limbs growth. Testing for running speed should be continued up to 16 to 17 years. Power development is largely dependent up to third decades of life, but strength touches about 80% at 17 years of girls and 16 years for boys.

Various researchers and scientists explained about the factors, which influence the performance. But whatever the case may be, key factors must be determined through the analysis of sporting factor such as physical, physiological, skill, psychological, biological etc., as they are key to talent identification and for their future possible development.

After evaluating literature of motor fitness, motor skill, talent identification etc., in relation to playing ability. It is greatly required that we must adopt a systematic and scientific approach for nurturing the players. Even Karpovich and sinning (1971) have mentioned that “activity science” is a science, which deals with a complex analysis of various facets of human activities affecting the human organism physically mentally and socially. Understanding of physical characteristics and the dynamics of motor fitness are becoming increasingly important to the physical educators and coaches with an increased scientific knowledge of sports. The trial and error methods, and application of guessing, become less than adequate in preparing sports persons for top-level competitions. So, with the expertise knowledge of scientists, coaches, physical
educators etc., the playing ability of the players can be predicted. Hence, the scholar has undertaken the present study to predict the playing ability of male and female basketball players of inter college level through the motor fitness and motor skill variables.

**Statement of the problem**

The purpose of the study was to predict motor fitness as well as motor skill variables to evaluate the playing ability of the male and female basket ball players of Panjab University. Therefore the problem has been stated as “Motor Fitness and Motor Skills as Predictors of Playing Ability in Basket ball”.

**Limitations**

1. The subjects who were subjected to investigation belonged to both categories residential and non-residential and they were having different living conditions, diets, rest and working conditions, which might serve as a limitation of the study.

2. Lack of motivation techniques was also one of the limitations in pursuing the research work.

**Delimitation**

1. The study has been delimited to the basketball players of inter-college level belonging to Panjab University only.

2. The study was further restricted to the following motor fitness and motor skill variables.

I. **Independent variables**

A. **Motor fitness variables**

   (i) Speed
   
   (ii) Coordinative abilities
   
   (iii) Explosive leg power
B. Motor skill variables

(i) Speed spot shooting
(ii) Lay up shooting
(iii) Control dribble
(iv) Defensive movements
(v) Passing

II. Dependent variables.

Overall basketball playing ability.

Objectives of the study

1. To find out the relationship of motor fitness and motor skill variables with the playing ability of male and female basketball players of Panjab University.

2. To find out the combined contribution of motor fitness and motor skill variables with playing ability of male and female basketball players.

3. To find out the most versatile variables of motor fitness and motor skill which could evaluate the playing ability of male and female basketball players.

4. To draw out regression equation for both male and female players to predict their performance.

Hypothesis

1. There would be a significant relationship between motor fitness and motor skill variables with the playing ability of male and female basketball players.
2. There would be a significant positive combined contribution of motor fitness and motor skill variable with playing ability of male and female basketball players.

3. Most versatile variable of motor fitness and motor skill variable will come out for evaluating the playing ability of male and female basketball players.

4. A meaningful equation of motor fitness and motor skill variables will emerge to predict the playing ability of male and female basketball players.

Operational definition and explanation of the terms

A. **Motor fitness** – According to Barrow (1997) motor fitness has been defined as “A readiness or preparedness for performance with special regards for big muscle activity without undue fatigue, it includes the capacity of the individual to move efficiently and with strength and force over a reasonable length of time”.

   “Motor fitness is one’s ability to perform efficiently basic motor skills involving such elements as power, agility, speed and balance” (Johnson and Nelson, 1982)

   Generally motor fitness thought as one’s current performance level as influenced by factors such as movement, speed agility, balance, coordination and power.

1. **Speed** – Speed is the ability to cover maximum distance in a shortest possible time.

   According to Dick (1980) “speed is the capacity of moving a limb or part of the body’s level system or the whole body with the greatest possible velocity”.

   Meyers (1974) elucidated speed as the capacity of an individual in the rate of making successive movements of the same kind.
2. **Coordinative ability** - Coordination is the ability to integrate separate motor system with varying sensory modalities into efficient patterns of movements.

Barrow and Mc Gee (1978) defined, “coordinative ability is the ability to perform specific movement in a series quickly and accurately”.

3. **Explosive power** - Explosive power is the ability to perform a maximum effort in as short a period as possible.

Barrow and Mc Gee (1978) “Explosive power is an action where maximum muscular force is released at maximum speed”.

4. **Strength** - Muscular strength may be defined as the maximal muscular force or tension used in the creation or prevention of a movement in one maximal effort of a muscular group.

Mathew and Fox (1976) “Muscular strength as the force, a muscle or more correctly a muscle group can exert against resistance in one maximum effort”.

Philip and Harniek (1979) explained that the strength was the contractive power of muscle attained by a single maximum effort.

5. **Endurance** - Endurance is the ability, which enables the sportsman to do a sports activity effectively without getting tired and to recover quickly from fatigue during and after the activity.

Endurance can be defined as the ability to deliver oxygen and nutrients to tissue and to remove waste, over sustained period of time.

6. **Flexibility** - Flexibility is the ability to execute movements with greater amplitude or the range of movement in a joint.

Johnson and Nelson (1982) said that flexibility was the ability of an individual to move the body and its parts through as wide a range of motion as possible without undue strain to the articulation and muscle attachments.

B. **Motor skill variables**
Alderman (1974) explained motor skill as highly developed capacity to perform a particular task or group of motor task.

According to Cratty (1967) “The term skill denotes that some learning has taken place and that a smoothing or an integration of behavior has resulted. Extraneous movements have been omitted and the performance is executed with increasing speed and accuracy, a decrease in errors or perhaps the ability to apply greater force”.

Harrow (1972) stated, “Motor skill implies the development of a degree of proficiency or mastery”.

1. **Shooting** - It is defined as the act of propelling the ball toward the goal in a type of throwing motion with the use of one or two hand.
   
   In simple words shooting may be defined as “put the ball through hoop”.

2. **Speed spot shooting** - Rapidly shooting from specified position

3. **Lay up shot** - Lay up shots are those types of shots which a player makes while in a running stride and when close to the basket.

4. **Dribble** - Bouncing the ball while at standing or in motion.

5. **Control dribble** - Handling the ball, through advance dribble procedures while standing still or in moving for advancing the ball and fooling the defensive player.

6. **Defense** - The act by which a player or a team attempts to prevent the offensive player or team from scoring.

7. **Defensive movement** - Means movement’s pattern used by the defensive player like, shuffle, front sprint, back sprint etc. for preventing the opponent to score or gaining advantage.

   In other words maneuvering the defensive movement by a defensive player for getting advantage over the offense.
8. **Passing** - Passing is the act of throwing a basketball from one player to another.

In other word a method of transferring the ball purposefully between or among teammates.

**Significance of study**

Generally it is considered that Indian performance in basket ball at international and national level is not good due to lack of talent. But it's totally wrong concept, there are number of athletes who in spite of possessing maximal talent and physical ability never became outstanding performer due to wrong placement and unsystematic coaching program.

Countries, which are performing well in basketball at international scenario is due to their scientific approach towards the games and they have sincerely advocated the philosophy "Catching them young and coaching them right". So, keeping in view the significance of talent selection and imparting scientific training to the players, the scholar have under taken the present study i.e. prediction of basketball playing ability through motor fitness and motor skill variables. The study may make the following contribution.

1. The investigation may help all those who are involved in the organization of sports and games by providing criteria for screening and selecting potential male and female players.

2. The study might help coaches and teachers of physical education in developing systematic and scientific fitness as well as technical training program.

3. The finding on motor fitness and motor skill abilities might help the basket ball players to evaluate themselves so as to motivate them to give better performance.

4. The study could motivate other basketball lovers to take similar studies so that basketball could become a more scientific game in India.
5. The study would make addition to the already existing knowledge of physical education and sports.

6. The study might motivate other scientists to take similar study in other sports discipline.