Chapter I

INTRODUCTION

Sports an integral part of the society has an important and valuable effect on many spheres of social life. Similarly the whole social pattern of a society may be reflected in its sports. Sports, unlike the other activities, are not an end product. It is undertaken essentially for its own sake. If we want to know why people play, the first answer is that they primarily play for fun, enjoyment or satisfaction. The sport is a carrier, which encourages coaching of various sports and games along with rules and regulations governed by them and also it prepares the trainees to take active part in competitive sports. It grows out of man’s struggle for survival in a hostile world.

With rapid growth and development in the modern world sports becomes a highly organized and competitive social phenomenon. It has a clear-cut classification on the basis of intensity of participation namely the recreation sports for children, health and conditioning sports for elders and competitive sports for the youth and adults. The competitive sports are further ranked according to the level of intensity of the competition. The highest level of competition in which the intensity of physical activity raises the pulse rate of the athlete to approximately between 180-200 beats/minute is considered as the top sport. As sports have more and more developed, it becomes a scientific discipline. Each nation in the world is vying with other to produce top class players to win laurels in the international competitions. Considerable research is done and developed to identify various
factors that will be productive of achieving high-level performance in skills of a given sport with proper coaching (Harrold, 1969).

Sports in the present day have become extremely competitive, previous records are being broken whenever there is competition. It is not mere participation or few days practice that brings an individual victory, but the continuous hard work of training right from childhood, a strong Anthropometry variables may influenced.

Today’s sports person faces some unique challenges. The standard are higher, the competition is tougher the stakes are greater attention in these days. Coaches’ physical educationists and sports scientists have always expressed a great need to know more about those Anthropometry variables, which are helpful in improving the motor skill of the players.

Today’s world is a world of competition, the rivalry to reach top and excel each other is so much. That every aspect that contributes for the excellence is carefully looked in it one of such aspects is the selection of the right person for the right event in sports and games, normally a choice of selection is given to that the player or the athletes. The players without knowing their inherent potential made wrong choices because of his wrong selection the individual concern is not able to reach the top of the ladder (Gangopadhyay, 1993).

Man, by nature, is highly competitive and in pursuit in performance; she has always been striving to jump higher and farther, to run faster and to demonstrate greater strength and skill. Physical fitness places emphasis on more and more activity (Uppal, 1992).
Physical educators have long realized that the performance of boys and girls is greatly influenced by factors such as age, height, weight and body structure. It is also acknowledge, that the persons of the same age will vary considerably in body size and shape that individual of the same height will differ greatly in body weight that person may weight the same but the relative proportion of the muscle fat and bone will be anything but equal (Harrold, 1979).

The preparation of an athlete today for achievement is a complex dynamic matter, characterized by a high level of physical and physiological efficiency and the degree of perfection of necessary skill and knowledge and proper teaching and tactics. An athlete arrives at this state only as a result of corresponding training sports activity in this respect is an activity directed at steadily enhancing the preparation of an athlete and grooming him for a higher level achievement. Many other factors are also brought in to action in his preparation such as special nutrition; organization of a general region in accordance with conditions of sports activity rehabilitation after injury etc., thus athletes training today is a multisided process of expedient use of aggregate factors so as to influence the development of an athlete (Matveyer, 1981).

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 competition. Basketball is a game of movement. But it's also a game of stops-and-starts. Think about a typical trip down the court as an offensive player: sprint to the offensive end of the floor, hustle 10 or 12 feet across the court to set a screen, roll to the basket, make a quick move to get open to catch a pass, pass and screen away, cut to the basket for a potential offensive rebound. It's all about footwork, movement, mobility. The defensive end of the floor requires equal (or even greater mobility and agility) (“Basketball is”, 2011).

Basketball is an athletic game involving its participants in a range of demanding motor skills. These skills vary in kind from, being able to run quickly with precision and good timing on a small, sometimes congested, court area, to, the fine hand eye coordination skills of catching and dribbling, or, shooting, or, passing what appears to be quite a large basketball. It also assumes that the players understand and incorporate a set of rules and are prepared to not only play by them, but to co-operate with others (including their teammates) in order to achieve the aims associated with the game. Basketball, above all else, is a game about decision making, which implies that its players need to be able to apply their skills in the quickly changing and very variable environment that is the essence of the activity.

All this might explain why children can get very excited about playing basketball for the first time. There seems so much to do and so much that is possible. The excitement can be contagious, and, if world participation and spectator figures are anything to go by, it appears to endure into the adult population. How all this excitement can be harnessed into an enjoyable
introduction to basketball is a challenging prospect for the new coach. Just as James Naismith (1) invented this new game in 1891 in order to achieve with his students the ‘pleasure and thrill’ of athletic competition, so the new coach might be reminded of what children might expect from being introduced to basketball:

- Short sharp bursts of running activity, forwards, backwards, diagonally and sideways
- Further athletic activity based on the use of major muscle groups especially in running jumps, or, jumping from standing
- Skills based on catching, throwing and moving which are modified to the more specific and identifiable skills of basketball
- Decision making skills based on anticipation and timing, as well as cooperation with, and, appreciation of, the positioning of team mates
- A clear set of rules along with a code of conduct associated with fair play in basketball
- The opportunity to play in game forms appropriate to the ability of the group and to deploy the skills that have been taught or demonstrated previously
- To play at an appropriate level in graduated forms of small sided games which give due regard to the organisation and management of players and equipment.
Basketball players move with great speed over a limited space. It is one of the most vigorous games and requires a great variety of athletic traits. In the game of basketball all the movements are involved like passing, throwing, changing the direction quickly, and sudden stop, jumping for rebound, feinting, maneuvering the opponent while going for offensive move and guarding the opponents in the defensive. All these require rapid movements demanding frequent changes in direction. For one to respond to such situation a player should possess good motor fitness and psychological qualities.

Basketball is a highly competitive game and it demands high physical qualities. The prime physical qualities are explosive strength, strength endurance, agility, speed, various coordinative abilities etc. Height without fitness or technical ability without endurance becomes a liability.

Agility is another physical fitness component, often presented by the terms ‘Maneuverability’, ‘mobility’, etcetera. It is the ability to change the direction of the body and its parts rapidly. Agility is a combination of several athletic traits such as strength, reaction time, speed of movement, power and co-ordination. Its display becomes essential in such movements as dodging zigzag running, stopping and starting and changing body positions quickly.

In all court games, including Basketball, fast starts, sudden stops, and quick change in direction are basic to good performance. To improve general or specific agility, the components that constitute it must be improved. Co-ordination involved in specific traits in their order of setting according to the activity.
The study of human physical measurements is dealt by another science Anthropometry, which has wide application as one of the essential parameters constituting the selective diagnostics of any game or sport. The study of ‘Body types’ has a significant place in the field of sports. Anthropometrical indices aided in evaluating potentiality for athletic performances.

The Physical structure especially the height and arm length have definite and decisive advantage in many game or sport. Similarly, segmental length of individual body parts, the arm length specifically, is of considerable advantage in selected events in Athletics and in certain games.

The constitutional qualities cannot be charged due to training. The main constitutional qualities are height and the physique. The players should be tall. Even though we consider that good height is essential for a basketball player, but prescribing a minimum height is difficult. Similarly she should have an athletic body.

Basketball is a game where the technique requires jumping ability, both for offensive and for defensive strategies; passing and shooting respectively. Height is really an advantage, especially in enhancing the springing ability. Shooting, usually done by a squad of two or more, demands a vertical jumping, to counter the smash, by proper positioning and precise timing.

Height has thus potential placement as a preferable pre-requisite for the performance-excellence in many sport or game. Anthropometrical measurements have revealed correlation between body structure and physical characteristics and sports capabilities. This knowledge of mathematical correlation permits sports
physicians to evaluate and to predict performance potentialities on the basis of physical characteristics and the specific requirements of the game for sport-the prediction prognostics (Sunder rajan, 1979).

In Prediction, results are anticipated before hand. Usually, the anticipated results are not chance guesses but are leased upon some known facts of relationship or carefully conceived beliefs (Clarke and Clarke, 1972).

The present study has taken into consideration a court game that is basketball. Court games are unique in the sense that they are played in a relatively small area and involve the handling of a ball or similar object and often an implement. It requires a high degree of running, maneuverability and total body agility in order to gain good court position and compete with one’s opponent on both offensive and defensive maneuvers. Fast starting, stopping, dodging, darting and acceleration are the fundamental requirements to a good court play. Since court games often involve conditions bouts of play at a vigorous rate, a high level of anaerobic endurance and also good jumping ability is of great importance (Jenson, 1995).

Competition is a fundamental feature of any sport and it is one type of human behavior also. Emphasis is needed on the development of personal traits and factors that influence performances in competition.

The team winner is used in sport competition to mean an athlete or team whose attitude, determination and fortitude combined with physical ability will consistently contribute success. It is easy to recognise winners who have great performance ability.
Selection of best players in basketball team is done from subjective observation of playing performance during selection trials. In addition their performance in the past years was also discussed and then the final team was selected.

The changing nature of basketball demands better skill and increased physical abilities. It is a known fact that basketball players should be better in morphological measures, body composition, motor fitness components and physiological traits. But there is no previous study in India to determine the factors, which dominate in basketball players and also to determine the factors, which contributed for successful outcome in basketball game. The present study is a sincere attempt on the above so-far uninvestigated area.

**Statement of the Problem**

The study under investigation was intended to identify the factors influencing the playing ability of university women Basketball players from selected physical, physiological, anthropometrical, psychological and performance variables.

**Objectives of the Study**

This study aimed to investigate the selected, physical, physiological, anthropometrical, psychological and performance variables among university women Basketball players of different achievement level by achieving the following objectives which are as follows:
1. To find out the relationship between playing ability and selected performance variables among the university women basketball players?

2. To find out the relationship between playing ability and selected physical variables among the university women basketball players?

3. To find out the relationship between playing ability and selected physiological variables among the university women basketball players?

4. To find out the relationship between playing ability and selected psychological variables among the university women basketball players?

5. To find out the relationship between playing ability and selected anthropometrical variables among the university women basketball players?

6. To predict the Basketball playing ability from selected physical, physiological, psychological, anthropometrical and performance variables among the university women basketball players?

**Assumptions**

Validity of this study will rely on the following assumptions:

1. With the exception of the research testing, subjects neither increased nor decreased their daily activity from levels previous to the study.

2. Subjects neither increased nor decreased their daily caloric intake from levels previous to the study.
3. Participants will not perform any vigorous exercise during the course study.

4. Participants will tested accurately by standardized test items.

5. Participants complied with the best of their ability to the testing directions.

**Hypotheses**

The following research hypotheses were framed for this study and it was tested at .05 level of significance.

1. There would be a significant relationship between Basketball playing ability and selected physical variables.

2. There would be a significant relationship between Basketball playing ability and selected physiological variables.

3. There would be a significant relationship between Basketball playing ability and selected anthropometrical variables.

4. There would be a significant relationship between Basketball playing ability and selected psychological variables.

5. There would be a significant relationship between Basketball playing ability and selected performance variables.

6. Basketball playing ability would be predicted from the selected physical, physiological, anthropometrical, psychological and performance variables among the university women Basketball players.
Delimitations

1. To achieve the purpose of the study, two hundred women university basketball players were selected randomly from various universities who participated in the South Zone Inter University Basketball Tournament during the year 2009-2010.

2. The age of the subjects ranged from 18 to 25 years.

3. The following variables were selected for this study such as

   **Performance Variables**
   
   - Passing
   - Shooting
   - Dribbling
   - Playing Ability

   **Physical Variables**
   
   - Speed
   - Grip Strength
   - Agility
   - Leg Explosive Power
Physiological Variables

Resting Pulse Rate

Breath Holding Time

Psychological Variables

State Anxiety

Self-confidence

Achievement Motivation

Aggression

Anthropometrical Variables

Height

Weight

Arm Length

Leg Length

4. The standardized tests were used to collect relevant data on the selected dependent variables.

Limitations

1. The previous experience of the subjects in the field of sports and games, which might be influencing on the data collection, was not considered.

2. Psychological factors, food habits, rest period; life style etc. could not be controlled.

3. The weather conditions such as atmospheric temperature, humidity and meteorological factors during testing period were also not considered.
4. Though the subjects were motivated verbally, no attempt was made to differentiate the motivation level during the period of testing.

**Significance of the Study**

1. The results of the study may provide the standards of the Basketball players in various predictor variables of anthropometrical, physical, physiological, psychological and performance variables.

2. The prediction and conclusions of this study will pave a way to create a new model that can be applied to the women in selecting Basketball players.

3. The findings of the study might be used as a screening tool and technique in analyzing and classifying the players.

4. This study may enable the coaches and the trainers to develop sound training.

5. This study might motivate other sports lovers and scholars to take up similar studies.

**Definition of the Operational Terms**

**Anthropometry**

Anthropometry is the science of measuring the human body and its parts. It is used as an aid to the study of human evaluation and variations (Clarke and Clarke, 1976).
Height

Height is the vertical measurement from the heel to top of the head of the human body (Sutcliffe and Ganham, 1981).

Weight

Body weight is described as the mass of an organism's body and it was measured in kilograms (Sutcliffe and Ganham, 1981).

Arm length

It is the distance from glenoid fossa of shoulder joint to the tip of the middle finger (Johnson and Nelson, 1982).

Leg Length

Leg length is defined as the distance between greater trochanter to the floor (Johnson and Nelson, 1982).

Speed

The capacity of moving a limb or part of the body's lower system or the whole body with the greatest possible velocity (Dick Frank, 1992).

Grip strength

It may be defined as the capacity of a person to exert muscular force of the palm on a standard Grip dynamometer.
Agility

It is the ability of the human body to change direction quickly and effectively (Singh, 1991).

Explosive Power

It is the quality of a muscle to contract forcefully in the quickest possible time (Weinberg S. Robert and Daniel Gould, 1995).

Resting Heart Rate

The number of heart rate frequency is defined as the frequency of heart beats in one minute when a player is in resting condition (Johnson and Nelson, 1982).

Breath Holding Time

Breath Holding Time is defined as the duration of time through which one can hold his breath without inhaling or exhaling after a deep inhalation (Strukic P.J, 1981).

Sports Psychology

“Sports psychology is the branch of sports and exercise science that seeks to provide answer to questions about human behaviour in sports” (Thelma, 1992).

Aggression

Aggression is defined as "the behaviour of directed towards goal of harming another living being who wishes to avoid such treatment (Robert, 1996)."
Achievement Motivation

Achievement motivation is dominant motivational orientation in situation characterized by the attainment of clear success or failure. The two primary motives are either to achieve success (Mass) or to avoid failure (Anne and Cripe, 1986).

Anxiety

It is a negative emotional state with feelings of nervousness, worry and apprehension associated with activation or arousal of the body (Thelma, 1992).

Self-confidence

It is the belief that one can successfully perform a desired behavior (Robert, 1995).

Basketball

Basketball is a team sport in which two teams of five players try to score points by throwing or "shooting" a ball through the top of a basketball hoop while following a set of rules. Basketball is one of the world's most popular and widely viewed sports (Griffiths, 2010).

Passing

A pass is a method of moving the ball between players. Most passes are accompanied by a step forward to increase power and are followed through with the hands to ensure accuracy.
Shooting

Shooting is the act of attempting to score points by throwing the ball through the basket. Methods can vary with players and situations.

Dribbling

Dribbling is the act of bouncing the ball continuously with one hand, and is a requirement for a player to take steps with the ball. To dribble, a player pushes the ball down towards the ground with the fingertips rather than patting it; this ensures greater control.

Playing Ability

In the present studies playing ability refers to overall ability of the players to play basketball game efficiently and assessed by the judges through subjective rating.