Chapter I

Introduction
Basketball is probably the most widely played team game in the world. The game of basketball has evolved to a great deal through the years. Basketball was invented on December 21, 1891 by a Canadian clergyman, James Naismith (Joseph Morse, 1973). The first game was played at the International Young Men's Christian Association Training School, now called Springfield College (Joseph Morse, 1973). Naismith invented basketball as an alternative to calisthenics and marching, which his students practiced to keep themselves fit during the winters (Lauren S. Bahr, 1995). On his name this game came to be known as “Naismith Ball”. But, in 1921, a man called Mhan named the game “Basketball” (Frank G. Menke, 1970).

Basketball is a simple game, which consists of a ball and baskets. The very first ball that was used was a soccer ball until 1894, when actual specific ball for this game was invented (William D. Halsey, 1975). While, the first baskets used were two peach baskets, hung from the balcony of the gymnasium (Frank G. Menke, 1970). Finally, in 1913 a ring with net was invented so the basketball could fall freely to the ground (Lauren S. Bahr, 1995). The invention of the ring and net was a major evolutionary step in the game of basketball. Due to the free falling ball the game’s tempo increased, which allowed the game of basketball to develop even more.

In 1893, due to the interference of overzealous spectators with the basketball, the backboard was invented (Lauren S. Bahr, 1995). The rule of

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dribbling in basketball was first used in 1896, at a basketball game at Yale University. But at that time, the dribbler could not shoot a field goal (Joseph Morse, 1973). In 1895, the free throw was introduced after a player had fouled (Joseph Morse, 1973). In 1897, the numbers of players allowed on the court was reduced to five in each team (William D. Halsey, 1975). In 1908, the five foul rule was introduced into the game. It stated that a player, who had exceeded the limit of five fouls, would not be permitted to continue in the game. In 1937, jump ball was introduced. Since the standardization of rules in 1934, it is believed that the game of basketball had changed for the best because it allowed for more speed and intensity (Lauren S. Bahr, 1995). In 1898, professional basketball had started. In 1925, the American Basketball League (ABL) was started, which was the first real attempt to widen basketball to the status of a worldwide sport (Lauren S. Bahr, 1995).

By 1932, basketball was officially given international status with the founding of the International Amateur Basketball Federation in Geneva, Switzerland. Basketball was introduced in Olympic games for the first time in 1936, which held at Berlin (Lauren S. Bahr, 1995). From that time onwards basketball’s popularity is rapidly increasing. At present, there are 176 nations (approx.) as members of the International Basketball Federation.

In India, the first national championship was held at New Delhi in 1938, under the auspices of Indian Olympic Association. The Basketball Federation

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Of India came into being after Second World War, to satisfy the need for supervision and control, of the game at both the state and national levels. Prior to 1950, the Indian Olympic Association controlled this game. But after the federation was formed in Bombay in 1950, (PS Bhattacharya, 2000), practically every state in India came to form its own State Basketball Association, which is affiliated to the Basketball Federation of India. In 1952, the Basketball Federation of India took the initiative of organizing the National championship for men and women. The boys (under 18 years) championship was introduced in India, in 1955, at Hyderabad (P.S. Bhattacharya, 2000). National Championships are now an annual feature, and are conducted in senior, junior, sub junior, mini and youth groups for both the sexes.

During the last decade, we have seen a steady increase in the popularity of basketball in India; the emergence of national championship and various tournaments of different age group levels, and increased media coverage, has resulted in increased opportunities and participation of young players.

Popularity of this game has increased in India, but still, we are unable to achieve desired goals at the world level. India’s first appearance in international basketball was in the first Asian games held at New Delhi in 1951, and after about 50 years of formation of the Basketball Federation of India, India’s highest achievement is third place in Asian Basketball Confederation championship, 1970.
The poor performance of Indian basketball players at the international level has been a cause of great concern, especially to the coaches, physical educationists and sports scientists. Efforts have been made to improve the standard of our sportsmen for long, but little success has been achieved, so far, in this respect.

In India, choice of sports is determined by the child’s interest, facilities available and popularity of the sports in that particular society. It is immaterial whether, his body structure is fulfilling the mechanical requirements of the game or not. If he chooses a wrong activity for which his body structure is not suited, a limit is set beyond which, his performance cannot be improved, however hard he and his coach may try.

Sports performance is, indeed, an aspect of complex human performance, which has several dimensions. Hence, several disciplines of sports sciences are required to work in a coordinated manner, to explore the nature of sports performance and the process of its improvements. In the last few decades, several disciplines of sports sciences have been established. They are kinanthropometry, sports physiology, sports medicine, sports training, sports psychology, sports pedagogy, biomechanics, etc. These sports sciences work as an integrated whole to given a superb sports performance.

Kinanthropometry has got a unique place among all these sports sciences. It is, in fact, the foundation on which lies the base of sports performance.

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Body structure plays a very significant role in determining human movements. Structural variations in body segments affect its movements. A specific type of body structure predisposes human body to advantage in a specific type of movement. The segmental length and breadth determine the leverage, possessed by the body (position of fulcrum and various lengths of load and effort arms), which, in turn affects the final outcome of force, created by muscles and its ultimate exploitation, for the purpose of motions.

There are numerous factors that are responsible for the performance of basketball players. Fundamental skills of basketball like dribbling, shooting, passing, rebounding, etc. requires a specific type of physique. The size, shape and form of the player are known to play a significant role in their performance. Along with these factors, performance in basketball is also determined by certain physiological variables such as vital capacity, heart rate and blood pressure, which are the determinants of athletes’ conditional abilities.

This study is an attempt to highlight the differences between high and low performance basketball players in relation to their physical and physiological variables. It aims to find out the natural and nurtured traits of basketball players, which makes them high or low performers.

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SIGNIFICANCE OF STUDY

The findings of this study are going to have theoretical as well as practical implications. It shall highlight physical and physiological traits of high and low performance basketball players, which in turn shall provide guidelines to our coaches, physical education teachers, and sports scientists to select appropriate talent at an early age, as early childhood is the best period for the development of neuro-muscular co-ordination of various skills. This may help in fulfilling our dream of producing world-class basketball players.

STATEMENT OF THE PROBLEM

The objectives of the study had led us to state the problem as–

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HYPOTHESIS

It was hypothesized that significant differences, between physical and physiological variables of high and low performance basketball players will be found.

DELIMITATION

The study was delimited to –

(1) Male High and low performance basketball players –

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• **High performance players** –
  
  International, National and All India University championship finalists’ players.

• **Low performance players** –
  
  Zonal Inter-varsity, State, District and College players.

(2) **Selected Physical parameters** – The physical parameters undertaken in the study were –

  Stature, Sitting height, Weight, Femur bi-epicondylar diameter, Humerus bi-epicondylar diameter, Hips width, Shoulder width, Upper arm length, Lower arm length, Thigh length, Lower leg length, Biceps muscle girth, Calf muscle girth, Sum of four skin folds (Triceps, Subscapular, Supraspinal, Calf skin fold).

(3) **Somatotype** – (Heath carter method, 1984).

(4) **Body proportionality** – It includes following indices –

  ➢ Sitting height-Stature Index
  
  ➢ Ponderal Index
  
  ➢ Thigh length-Lower leg length Index
  
  ➢ Upper arm length-Lower arm length Index
  
  ➢ Hips width-Stature Index
  
  ➢ Shoulder width-Stature Index.

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(5) Selected Physiological parameters –

The physiological parameters undertaken in the study were –

- Blood pressure,
- Vital capacity,
- Heart rate.