CHAPTER – I
INTRODUCTION

In today’s modern world, our life is permeated, saturated and may be even subjected to research. The development of such research work done by researchers in the field of human life made their life more complex and competitive.

Competition is one of the outgrowths of modern life. It is a natural activity which is inevitable in life and that the education process should assist with the preparation of individuals for the ‘battle of life’. Competition provides the means by which one can show one’s worth by competing successfully.

“Excelling”, “doing better”, “Surpassing”, are some of the expressions which are generally used to denote competitions with himself or others a sort of deliberate and conscious animosity that has existed for centuries and shall continue to exists as long as betterment remains the goal of the human society. Consciously or unconsciously everyone is in this race.

Sports competitions have always occupied an important place in any culture. It is an undisputed fact that national character expresses itself not only in folk music, literature and art but, also in typical form of sports. Frequently, the twin images conjured up by the name of the nation and its favourite game are so closely linked, that they almost merge or we can say, that life of people and their philosophy are way of living and social educational set up have affected and effected by the games and sports which they are playing.

The modern world appears to be much more concerned with the world of sports. The hold of sports has grown very strong on the mind of
individuals in the society at large. Sportsmen and spectators are very clear about the values and significance of sports. There is hardly any individual who has been left out of its impact in the countries of the present world. Now winning the competition involves national prestige as each nation strives to win a tournament in which they compete. There are certain nations/states, which try to project the superiority of their political ideology and socio-political system through spectacular achievements in the field of sports. They show their excellence by winning the maximum number of medals at the international competition like Olympic Games, World Championship etc. The participating competitors in sports, at the international level bring name, fame and laurels for their countries and raise their prestige high in the world.

Frost (1971) said, “Conquering is a form of achieving and appears to be a natural goal. Winning is a form of conquering and is a glorified, sometimes out of proportion to its real significance.”

Now, it is a time of competitive sports, the philosophy of participation in games and sports has undergone a significant transformation. As a participant and competitor, the sole aim is ‘winning’ performance, which is inherent in competition. According to Renewas (1972) “Performance is a key note of all the sports – its basic principles as the sports has become prestigious aspect to prove one’s superiority over others.”

Harri Dhetrich (1982) explained that at each Olympic games and international competitions the standard of performance is raised and new records are set for human skill and endurance. Partially it is due to the improvement in sports facilities and equipment but mainly due to the development of modern training methods and adaptations of sports training on more scientific lines. Sports’ training has become more efficient and effective as a result of the applied and fundamental research
in the area of mechanics, physiology, psychology, nutrition and sports medicine. It also aims at understanding and assessing the athlete in totality. Competition at all levels are so keen that no coach or player can afford to neglect the application of scientific training principles that can give him an advantage over or at least keep him in pace with his/her opponent.

According to Powell (1977) “Scientific methods are used to coax every centimeter, every fraction of a second and every ounce of energy out of an athlete who is considered to be almost a machine. Then coaching through constant honing and polishing wears down all Knobs and excrescences and makes what often seemed like ordinary abilities into a coordinated, smoothly functioning organism.”

Preponderance of scientific evidence obtained from different investigation’s has revealed that high level of performance depends upon various factors like somatic, physiological, anthropometrical, psychological etc. Hence, there is a need to pay attention upon these ‘Performance’ factors. Countries leading in sports, such as U.S.A, Russia, Germany, China, England etc. are using well-developed scientific system of training for their players and teams over a period of several years.

All the coaches, physical Education teachers and trainers are emphasizing that a player or an athlete must posses such genetical traits/ characteristics which suit him/ her the most in his/ her sports. For that right talent identification is acknowledge being fundamental and significant for an individual’s development to achieve Olympic level performance in any sports discipline

A. Dirix, H.P. Knuttgen and K.Title (1988) advocated that it has become a necessity to identify and select a future elite athlete right at childhood or early adolescence. It takes many years of intensive and regular training till an international sports performance level is achieved.
The children selected for elite sports activities require suitable conditions, sports facilities, equipments of high quality, rational life style, the guidance of expert sports physicians and well-educated and experienced coaches. Such conditions can be created for selected children at right age to get quality performance. Therefore, the correct identification, selection and placement of young talent are becoming important everywhere in the modern competitive sports world.

Motto (1977) stated that performance depended upon inherited characteristics like height, speed and limb length. The establishment of such factors become all the more important, he further suggested that there was an optimal age for testing of various physical characteristics, as there were certain age when development reached at a stage where trend was predictable e.g. adult level of agility reached around 12-14 years with little development after that, speed of movements which depends on central nervous system functions which matures at around fourteen years, with limbs growth. Testing for running speed should have been continued up to 16 –17 years. Power development was largely dependent up to third decades of life, but strength touched about 80% at 17 years of girls and 16 years of boys.

In the area of talent selection various fundamental research i.e. Zaporozhauov (1993) N.J. Bulgakova (1986), M.S. Bril (1980) was established. But, with the advancement of the science of sports in all directions has found new disciplines with micro specialization. The scientific basis of selection calls for serious alteration as it has created more scope for modification in the existing criteria of selecting ‘talent’.

From the last few decades a new area of study rise, called futurism or futuristic, which is an attempt to scientifically examine the future. In sports people have tried to predict the success of an individual during competition. This prediction is usually based on motor fitness level of the players.
The development of a child as a whole depends to a great extent on his/her motor development. By motor development, it is presumed that development of strength, speed, agility, power, and precision in the use of his arms and legs and other body muscles coordinative ability. Emotional behaviour and mental development of a child are related to his/her motor development. The child also learns to adapt himself in the society by learning proper motor behaviour. The success and failure of the child often depends on his/ her capabilities in applying his motor abilities to a particular task.

Motor fitness might be referred to as an efficient performance in such basic requirements as running, jumping, dodging, falling, climbing, swimming with sustained effort in a variety of situation and, therefore, would involve such element as power, agility, speed and balance. “Motor fitness is the final criterion through which all other elements of physical fitness or total fitness are seen and measured in man” (Book 1952).

Importance of motor fitness can be 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 sports.

Keeping in view the above facts the sports performance needs high level of motor fitness. The research scholar herself is qualified table tennis coach and physical educator, realized the importance of required motor fitness components, which could be helpful to paddlers in the table tennis playing ability.

Table Tennis 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 movements, amazing accuracy, great concentration and attention and sometimes thrilling extra-ordinary finishes.
Table Tennis match is a match of 'best of five or seven or nine' set and each game consists of eleven points. There is a one-minute time-out permitted to each player in each game. To get outstanding performance in table tennis game a high level of motor fitness is required.

People may argue that table tennis is a game of speed and spin, reactions time and anticipation, concentration, touch and power, but, it involves all these factors and also requires all the other motor fitness factors which are generally required by any other sports.

The motor fitness variable namely speed, power, agility, endurance, flexibility and reactions time are very important for table tennis players because the nature of the game requires fast lateral as well as forward and backward movements to tackle the ball, which come with varying speed and spin in any direction on the table.

Barrow and McGee (1979) said that agility plays an important role in physical activities and it is revealed to a great extent in sports and game involving efficient and quick changes in body position such as basketball, badminton, football, tennis, table tennis etc.

It was observed that power plays an important role in the game of table tennis. Powerful strokes are used to kill the ball with a speed of approximately 90 kmp or 145 kmp or more, which is definitely the net result of power. Optimum flexibility of wrist and trunk joint also plays a vital role to get the momentum and proficiency for playing any type of stroke.

Morehouse and Miller (1976) stated that flexibility played an efficient role in all sports and game, it is capacity of the body to move freely through the full range of extension and flexion at the joint without any restriction. It has been a common belief that a high degree of flexibility is necessary for success in all athletic endeavors and that participation in any sport will improve this quality.
A well-contested table tennis match takes approximately 60 to 90 minutes or more, which require good anaerobic and aerobic endurance among the table tennis players. As the nature of the game demands that players must possess good reaction ability and quick movement time of various body parts, especially eyes, hands and legs to counter attack the opponent attack effectively.

The research scholar went through the literature available regarding the contribution of different motor fitness components to the playing ability of the table tennis players. However, after going through, it was found that no scientific work has been done in this field, especially in India. Having this in mind and after further consultation with experts, finally the research scholar have undertaken the present study to predict the playing ability of male and female table tennis players of inter college level through motor fitness variables.

**Statement of the problem**

The purpose of the study was to predict motor fitness variables to evaluate the playing ability of male and female table tennis players of Panjab University, Chandigarh. Therefore the problem has been stated as “Motor Fitness Variables as Predictors in Table Tennis Playing Ability.”

**Delimitation**

1. The study has been delimited to the table tennis players of inter-college level belonging to Panjab University only between the ages of 18 to 25 years.

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

   I. **Independent variables**

   (i) Speed

   (ii) Flexibility
(iii) Power
(iv) Agility
(v) Endurance

II. **Dependent Variables**

Overall table tennis playing ability

**Limitations**

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

2. No special motivational technique was used during the test. Therefore, the difference that might have occurred in performance due to lack of motivation was recognized as the limitation of the study.

**Objectives of the Study**

i) To find out the relationship of motor fitness variables with playing ability of male and female table tennis players of Panjab University, Chandigarh.

ii) To find out the combined contribution of motor fitness variables to the playing ability of male and female table tennis players of Panjab University, Chandigarh.

iii) To draw out regression equation to predict the performance of male table players.

iv) To draw out regression equation to predict the performance of female table tennis players.
Hypothesis

i) There would be a significant relationship between motor fitness variables and playing ability of male and female table tennis players.

ii) There would be a significant positive combined contribution of motor fitness variables to the playing ability of male and female table tennis players.

iii) A meaningful equation of motor fitness variables will emerge to predict the playing ability of male table tennis players.

iv) A meaningful equation of motor fitness variables will emerge to predict the playing ability of female table tennis players.

Operational definition and explanation of the terms

A. Motor fitness

According to Barrow (1977) 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 is 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.

**Flexibility**

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

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

**Power**

Power is the ability to perform a maximum effort in as short a period as possible.

Donald K. Mathews (1978) “Power is one’s ability to get one’s body mass in a shortest period of time the physiologists refers to such events as aerobic.”

Borrow and McGee (1978) “Power is an action where maximum muscle force is released at maximum speed.”

**Agility**

Agility may be defined as the physical ability, which enables an individual to rapidly change body position and direction in a precise manner.

Harold M. Barrow and Rosemary (1979) explained “Agility is the ability of the body or parts of the body to change direction rapidly and accurately.”
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.

Hardayal Singh (1991) defined “Endurance is the ability to do sports movements with the designed quality and speed, under condition of fatigue.”

Reaction Time

Reaction Time is the interval of time between the presentation of the stimulus and the initiation of the response.

Morehouse and Miller (1976) “Reaction time is the time lapsing between movement of application of stimulus and the movement of response.”

Phillips and Hornak (1979) “Reaction time is the delay in the time between the presentation of a stimulus and initiation of a volitional response.”

Significance of the Study

Researchers in many countries are experimenting on ways and means to find out the best, easiest and most economical methods of selecting the talent and provide best training to their sportsman in terms of time spent in order to get maximum benefit from them.

Countries like China, Korea, Japan, U.S.A., Russia, England etc. are performing very well in table tennis at international scenario because of their scientific approach towards the game. But, Indian performance at international level is unsatisfactory. So, it is required that we should put more emphasis on scientific training and a strong belief in the philosophy of ‘Catching them young and coaching them right’ It is in
conformity with this philosophy that the scholar has undertaken the present study which may make the following contribution.

1. The investigation might help all those who are involved in the organization of sports and game 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 findings on motor abilities might help the table tennis players to evaluate themselves to serve as to motivating force to give better performance.

4. The study could motivate other table tennis lovers to take similar studies at different levels and standard so that table tennis 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 undertake similar study in other sports discipline also.