CHAPTER I

INTRODUCTION

Man is striving for perfection in every sphere of knowledge. The achievements in human skills are appreciated and valued in every society. Sports skills have now acquired an important place in the culture of society and this culture is valued through achievements in sports.

Excellence in Sports at International level enhances the prestige of a nation. Victory in International sports competition is celebrated throughout the country and the winners are honoured by the people as well as the Government. Lots of incentives are provided to the sport persons who attain higher international standards. Those who succeed become national heroes. Youngsters are motivated to take sports more seriously and dedicatedly. India is no exception to this international phenomenon. The Government of India has created separate Department of Sports and Youth Affairs in the Ministry of Human Resource Development and a Minister of State has been appointed to look after the promotion of sports. Sports Authority of India under the Chairmanship of Prime Minister has also floated a number of schemes for the promotion of sports in India. Today's world belongs to the best and the fittest. The weak ones have no place. Today people are ambitious with an
urge to get the better of the others, to steal a march over others and to obtain supremacy in all walks of life.

What is true of a man is also true of a nation. Every nation wants to exhibit its supremacy. This challenge stimulates and inspires men and women, young and old to sweat and strive, to run faster, to jump higher and to throw farther than others. This excellence and success can be achieved only through a well planned systematic and scientific sports training. Technology has covered every aspect of human life including sports. Modern sports have become highly scientific. Consequently, new records are being created and improvement in performance is much faster.

Keeping in view the role of scientific methods of training in enhancing performance in sports, the researchers have made attempts to develop new methods of training. Several means of developing physical and motor qualities have been evolved.

It is a well known fact that all sports activities need higher standards of general fitness and each sport requires dominance of a particular fitness components such as arms strength is very important in wrestling. Similarly, speed, endurance and co-ordination all these are contributory factors essential for attaining proficiency in wrestling. Wrestling is predominately anaerobic activity as its continuous bouts are played with fast speed. Thus it
needs development of a high level of anaerobic endurance among the wrestlers. Wrestling requires high degree of running and total body agility, so that the wrestler is able to gain good mat position and competes with his opponent in offensive as well as defensive manoeuvres.

"The Conditioned Reflex Theory" of Pavlov and Skinner says that the development of body fitness and game skill takes place on the basis of conditioned reflex activity of the brain. Puni Classi (1980) confirms it by adding that the speed of a sportsman will be increased on the basis of increased mobility of nervous process and nervous cells; strength results from the working of the process of excilation and inhabitation and finally with the development of capacity to maintain optimum rhythm in the activity of different body system and the organism as a whole for a longer time.

Wrestling, which originated in ancient Greece, is one of the oldest known sports. It is one of the finest forms of exercise, bringing in to use all the muscles of the body, and is also a wonderful mental stimulant. It is also one of the compulsory sports of the present day Olympics Games, where two forms are practised: Free style and the Greco-Roman style. With free style wrestling, which has evolved the Lancashire and "Catch as-Catch-Can style", any fair hold is allowed, but in the case of Greco-Roman style no hold are allowed below the waist and the use of Legs is
It was observed that the standards of wrestling have improved considerably in many countries all over the world. The improvement is attributed to the scientific methods of coaching and training. Advanced countries are giving more emphasis on Physical Fitness and basic fundamentals of wrestling, which are very essential for a successful wrestler.

Compared to Indians Western wrestlers are more fit and have developed modern techniques and tactics. They have a sound system of scientific coaching, objective and appropriate selection procedures and long duration of training sessions. The latest knowledge derived from scientific approach is divulged in the field of sports to enhance the standards of a sport. Wrestling as a scientific and popular game is also developing rapidly in various parts of the world.

The promotion and evaluation of the level of fitness is considered essential in wrestling. Research work done in the past has not been able to explain how physical fitness of a wrestler should be measured. Tests constructed by Flishman (1964), Scott (1943), Barrow (1954), AAHPER (1976) were related to the general aspects of motor fitness and do not confine to the needs of specific requirements of the wrestler.

The research work done in the field of wrestling
is very limited. Some studies have also been done relating to tests and measurements in wrestling but no study has been conducted so far in India to measure physical fitness of a wrestler specifically. However, some literature does exist in relation to the construction of test to measure specific physical fitness or motor fitness components in the area other than wrestling. Sharma (1987) undertook a study on the construction of specific physical fitness test for Soccer players. For his research he used the factor analysis technique on the data of Soccer players of North Zone Universities of India. As many as seven factors of specific physical fitness were obtained out of which six were considered meaningful to select test items from each factor with high loading were included in the test battery. Selected test items were applied on 500 Soccer Players to develop norms.

Sharma S.N. (1987) constructed and standardized specific physical fitness test for badminton players. He used factor analysis technique on the data collected for 100 inter-college and district level badminton players of north India. As many as seven factors of specific physical fitness were obtained, out of which five were considered meaningful to select test items from each factor, which had the highest loading and were included in the test battery. The derived test items were applied on 500 badminton players to develop norms.
Researchers have tried to measure physical fitness in a number of ways. Physical Fitness Index Test was developed by Rogers (1925) to measure general health or Physical activity. Measurement of height and weight were also incorporated into the Physical Fitness Index Test items which include height, weight, lung capacity, grip strength, back lift, push ups and pull ups.

A test battery of physical performance test was selected by Flishman (1964) on the basis of factors isolated from much larger batteries of tests. The factors identified in two separate studies were combined into one test battery called 'The Basic Fitness Test Battery'. The basic fitness test items which form this test battery are extent flexibility, dynamic flexibility, shuttle run, soft ball throw, hand grip, pull ups, leg lift, cable jump, balance and 600 yard run-walk.

Ajmer Singh (1986) undertook a study to develop physical fitness norms on four thousand college students of Panjab University, Chandigarh. Fleishman's Test Battery was used on 17 to 21 years old college students. In conclusion he found that physical fitness improved linearly according to age and the students belonging to the rural area were significantly superior in their performance on different items.

Singh (1986) prepared physical fitness norms for high school boys of Punjab State. Data were collected
on five thousand students from various schools in the State. The administered norms consisted of eight items viz. standing Broad Jump, Sit and Reach Test, Agility Run, Sit Ups Bend Knee, 50 metres dash, Push Ups, Cricket Ball Throw and 600 metre run-walk. The percentile norms for Physical fitness were found to be valid and suitable to assess the Physical fitness level of the high school boys in the age group of 12 to 15 years.

Sangral (1986) constructed and standardised a specific fitness test for elite hockey players. The subjects for the study were 23 regular hockey course male trainees of N.I.S. Patiala.

Keeping in view the importance of physical fitness in wrestling and on the basis of existing scientific literature, the present research scholar has attempted to work out the specific fitness test for college wrestlers. This may perhaps be the maiden attempt in this sport!

STATEMENT OF THE PROBLEM

Though there is a wide scope for research in wrestling, yet limited work has been done in this area as compared to other sports. As a result of scientific research in athletics, its standard has improved at international level particularly in developed nations. An attempt has been made to construct specific Physical
Fitness Test battery to measure specific fitness of wrestlers. The researcher has undertaken the Project entitled "CONSTRUCTION OF SPECIFIC PHYSICAL FITNESS TEST FOR WRESTLERS".

SIGNIFICANCE OF THE STUDY

This study would help to evaluate the fitness level of college wrestlers and to some extent give objectives of selection procedure. This study would help Physical education teachers and coaches to design and formulate conditioning programmes for the wrestlers. The test battery would also help in determining the specific physical fitness goals to attain improvement in performance of the wrestlers. The present study would also help to conduct further scientific research in training methods for the wrestlers.

OBJECTIVE OF THE STUDY

1. The study was focused on the construction of specific physical fitness test for college level wrestlers.
2. The Secondary objective of the study was to prepare the norms of specific physical fitness test for college level wrestlers.
3. Finally, an attempt was made to fill a big void in the scientific literature on wrestling.

DELIMITATIONS

1. The study was confined to only three universities of Haryana State, namely, Kurukshetra University, Kurukshetra; Maharishi Dayanand University, Rohtak and Haryana Agricultural University, Hissar.
2. Further, it was limited to only two hundred wrestlers from these three Universities of Haryana State.
3. The study was restricted to University level wrestlers i.e. the wrestlers who participated in the inter-college competitions of the university.

DEFINATIONS AND EXPLANATION OF TERMS

SPECIFIC PHYSICAL FITNESS

The specific physical fitness refers to the adaptation of Physiological and muscular systems of the body to the stress caused by the specific activity on the organism which may differ from game to game.

It is a specific strength which may endure for longer duration in quick succession of contraction and
relaxation of arms, muscles during the actual wrestling competition.

CARDIOVASCULAR ENDURANCE

Cardio-respiratory endurance is the ability of the circulatory and respiratory system to adjust to the vigorous exercise and to recover from the effect of exercise (Phillip and Hornat, 1976).

SPEED

Speed is the rate of change of position of body and speed in a particular direction is called velocity. "For the purpose of this study 'Speed' would mean 'ability to run fast, which is essential for top play. It may be as critical as the ability to accelerate quickly', (Chaudhury and Sinha, 1974).

"Speed may be defined as the capacity of the individual to perform successive movements of the same pattern at a faster rate". (Barrow and McGee, 1979).
STRENGTH

"It is the muscular force exerted against movable objects", (Johnson & Nelson, 1982).

Strength may be defined as the force that a muscle or muscle groups can exert against resistance in one maximal effort (Mathew, 1979).

STRENGTH ENDURANCE

Strength endurance is the athletes' tolerance level against fatigue in strength performance of a long duration, (Harre 1982, Dick 1980), gave the following definition: "Strength endurance is the ability or capacity of the whole organism to withstand fatigue".

FLEXIBILITY

It refers to the efficiency of the body or its parts to move freely through maximum range which may be an extension or flexion of specific joints without undue fatigue.

According to Hardyal Singh (1984) "Flexibility is the ability to execute movement with greater amplitude".

Barrow and McGee(1971) define, "Flexibility may be defined as the range for movement in a joint".
Johnson and Nelson (1978) have opined that "Flexibility is the ability of an individual to move the body and its parts through a wide range of motion without undue strain to the articulation and muscle attachment".

For the present study the word flexibility means the ability to move the trunk and limbs through a wide range of positions. As flexible wrestler has an advantage over the less flexible wrestler.

AGILITY

It is the ability to change direction rapidly and accurately. It depends upon the strength, speed of reaction and movement and big muscle co-ordination (Phillips and Hornak, 1979).

Agility is the ability to change both rapidly and accurately, the position or direction of the body through large range of movements (Corlton, 1962).

Agility is the physical ability which enables an individual to rapidly change body position and direction in a precise manner. The above listed definitions refer to the agility which is one of the components of physical fitness. In this study the meaning of agility is slightly different from the above concept, it refers to specific nature of agility involved in wrestling. It is
mostly related to the application of techniques which opponents apply during wrestling bouts.

ENDURANCE

The ability of muscles to work against a moderate resistance for longer period of time is termed as endurance.

It is the capacity of a wrestler to repeat an identical exercise by a specific body part at a fast rate during a specific period.

FACTOR ANALYSIS

"Factor Analysis is a statistical procedure that is used to reduce a large number of variables, called 'Factors'. The object of factor analysis is to achieve parsimony and often to discover the essential variables that summarise the information in a large set of variables (Richard M. Jaeger, 1983).

TEST

Test is a tool or instrument of measurement that is used to obtain data about a specific trait or characteristic of an individual or group (Phillip and
Hornak, 1979).

"A test is the instrument used to assess a variable" (Earle F. Zeigler, 1982).

RELIABILITY

Reliability means the extent to which a test is consistent in measuring what it measures. It is usually estimated by some form of reliability coefficient or by the standard error of measurement (Meyers R. Carlton, 1962).

VALIDITY

Validity means the extent to which a test measures what it intends to measure, specific to the purpose for which the test is used (Meyers R. Carlton, 1962).

OBJECTIVITY

Objectivity means the extent to which a test is consistent in measuring what is measured when administered by different individuals (Mayer R. Carlton, 1962).
"An experimentally derived index which enables teachers to compare the achievement or status of their students with those of a similar group. Norms are often assumed to be representative of some larger population", (Barrow and McGee, 1979).

'Norms are values considered to be representative of a specified population (Johnson and Nelson, 1982).