CHAPTER III

METHODOLOGY

In this chapter the investigator describes the subject selection and area, variables, selection of tests, the competence of the tester, instrument reliability, data reliability, orientation to the subjects, validity of the questionnaires, scoring procedure, collection of data, tests administration, design and statistical techniques for analysing the data.

SELECTION OF SUBJECTS

To get the results three hundred subjects were taken from three districts of Kerala such as Trivandrum, Ernakulum, and Kannur which is south, central and northern parts of Kerala State. The subjects were selected form government, government aided and private schools of hundred in each different kinds of schools and by this selection we will get an overall picture of the State.

SELECTION OF VARIABLES

The study is intended to analyze, physiological, physical and psychological variables among different kinds of schools such as government, government aided and private schools in Kerala State. Three districts were taken from the state to get the overall picture of the students. For the well being of the human it is important that both mentally and physically he should be fit. In this study comparison is being done in three types of schools in Kerala State and fifteen variables had taken. The physical variables are leg strength, explosive strength, speed, flexibility, strength endurance, agility and body mass index. The physiological variables are pulse rate, breath holding time, vital capacity and blood pressure and the psychological variables are aggression, anxiety, achievement motivation and emotional maturity for this investigation.

SELECTION OF TESTS

The present study was undertaken primarily to determine the physiological, physical and psychological parameters between Kerala State government, aided, and private school students.
As per the available reviews and literature, the researcher had collected the data using standard tests and presented in Table I.

**Variables and Tests**

Table - I

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<tr>
<th>SI. No.</th>
<th>Variables</th>
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<td>15</td>
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**ORIENTATION TO THE RESPONDENTS**

The investigator gave the correct part of subject in this study and the requirement of this study in the current scenario. The researcher illustrated the importance of data, procedure of collection and testing, about the variables and the measurement. The respondents had sufficiently motivated to perform their maximal level during the testing period.

**COMPETENCE OF THE TESTER**

The investigator got assistance and support from the coaches’ and other experts from the area of sports and physical education to conduct the testing procedure. The researcher used his maximum efficiency to get the correct result and gave the sufficient time to the subjects to prepare the test.
PILOT STUDY

The investigator has conducted a pilot study to assess the ability and efficiency of the participants and make the design. Ten subjects had used to conduct the pilot study and all the ten students underwent the entire testing programme in systematic way.

INSTRUMENT OF RELIABILITY

The researcher used a list of standard instruments such as the stopwatches, weighing machine, stadiometer, spirometer etc. The testing materials have collected from reputed companies and institutions to justify the accuracy of the outcomes.

SUBJECTS’ ORIENTATION

The researcher initially have given the outline about the study, the importance of the study in the present world, how to perform the as a subject for this investigation and what are the procedure to follow during the period of testing.

VALIDITY OF THE QUESTIONNAIRES

Many investigators have used these questionnaires to conduct research which are selected. The questionnaires are established by very famous and universally accepted physical education scientists and these are instrumented to this study such as achievement motivation, competition anxiety, aggression and emotional maturity.

STATITICAL PROCEDURE

The one way analysis of covariance (ANOVA) was administered to find out the date. Scheffe’s post hoc test was applied to find out the paired mean difference of this investigation. In all the cases the 0.05 level was considered as a confidence.
DATA COLLECTION

Nowadays all of our martial and sports activities are disappeared from the villages and it become only performance orientated which is presented in the specific programme. Lots of indigenous martial sports were in this state, however, Kalaripayattu, is the mother of all martial arts in Kerala. Boat race and football are the main attraction of the people at right now.

There is lot of star in different field being produced by Kerala State as like Sreesanath, and Yohannan in cricket. But in cricket we can’t achieve anything nation wise. Nevertheless, the team was disbanded after the season because of conflict of interests among its franchises. Kerala is giving priority for playing football in India along with West Bengal and Goa and has produced many national and international level players. In athletic, volleyball and all other sports activates have lots of achievements from Kerala State by outstanding performance of the athletes and players.

National Rural Health Mission provides quality in health services and facilities to all rural area peoples in India. Kerala delivers key conditionality’s and priority action to be taken in different health components during past ten years. Ministry of Health and Family Welfare helped to move forward the journey towards quality to all. The authorities had chosen Kerala as a nodal agency for monitoring the important components of the State PIP 2012-2013 in Kerala. The report based on the progress and achievements of first quarter was already submitted to the Ministry of Health.

Kerala is very special and ahead of many developing states and a place that offers real hope for the future of the Third World due to its all-round growth. Low infant death rate, low mortality rate, high birth rate, high literacy, are the main attraction of the respective state. Achievements have been considered the constituting elements of the Kerala model. The main programme of the state is a wide network of health infrastructure and, policies and man power of state government and other social factors. Kerala has acquired one of the most comprehensive health systems in India. However, people in Kerala are now facing the problem of high morbidity both from re-emergence of communicable diseases and the second generation problems like the ageing population and spreading of non-communicable diseases. The health programme in Kerala namely ‘Arogyakeralam’ under the National Rural Health Mission during
the period 2005-2012 is intensely vigilant to provide quality health care to all especially the under privileged and marginalized in the state.

For improving the efficiently in education, excellent authorities are functioning in the 14 revenue districts of the state headed by Deputy Directors of Education. The DEO is the key supervise for and he is giving all the instruction to all the respective schools. The AEO has the primary responsible person for administrate the primary schools within the Sub-Districts.

Thiruvananthapuram or Trivadrum is one of the biggest districts and the capital of Kerala State. Being as the capital of Kerala among population about fifty percentage of them are government employees. All are using ‘Malayalam’ as the mother tong of the State. The city is placed near the sea and most of the families were middle class status. Education is very high in the district, and lot of cultural activities and sports activities are taking place every year in the state. India’s proud ‘Vikram Sarabhai Space Center’ is situating near the Trivandrum city. The main road passing in the middle of the city were named as ‘Mahatma Gandhi Road’ as a remembrance of the father of our nation. The city spirit of live and let live is nowhere more evident than at Palayam, where three centres of worships of three faiths rub shoulders the ancient Ganapathy Temple, the Palayam Muslim Mosque and the Palayam Christian Cathedral Blessed with a pleasant climate virtually. After the 'hot' summers, which thankfully pale in comparison to the 'main-spots' of India, The state festival was crowned and celebrates by the name of ‘Onam’. Kadhakali and mohiniyattam were the main cultural activities of the respective State. The spring festival of Onam was a traditional fare all over the state, including the majestic snake boats and the grand elephant parades.

Ernakulam is actually situated in the central part of the state Kerala. It is the biggest industrial city of Kerala State. So density of population seems to be very high in the city. It is also situated in the nearer edge of the sea shore and known as the commercial capital of the Kerala State. The old name of the Ernakulum district was ‘Kochi’. History says that once the Ernakulum was the main capital of the city of Kochi and the name of Ernakulum is derived from the name of a very famous temple of lord Shiva in the city. The climate seems very sensitive and good condition in the city and it is perfectly coming throughout the year. The temperature is not very high and not very low it is maintaining the average of 33° Celsius. Just near to the city
Cochin port trust which is number one in India is situating in the heart of the city. Most of the population belongs to high status and majority from software technology field. The tight scheduled life and the lack of physical fitness fostering the life style disorder for the common people. Tourism also one of the income source for the city.

Kannur district is situating at northern border of the Kerala State. As per history the old name of the district was ‘Cannanore’. It is said that the word ‘Kannur’ is derived from the Hindu goad Krishna, It is actually somewhat different than other two districts. Population density of the district was lower as compare with other two districts. The soil is very good for agriculture purpose so agriculture is the main income of the common people. Nearby fifty percentages of the people were living in urban areas and it is the second largest districts in Kerala state.

Based on the prevailing scenario and the knowledge enriched from earlier studies, this investigation was purported to use the, physiological, physical and psychological variable among the different kinds of school students in Kerala State. To achieve this investigation 300 boys from different kinds of schools such as government, government aided and private from south, middle and northern part of Kerala such as Thiruvananthapuram, Ernakulam and Kannur district have been selected as the area of research.

RESOURCES OF THE DATA

This has become even more important at a time when the state is facing the emergence and re-emergence of some of the communicable diseases. Kerala government had faced multiple challenges in the field of health problems. Government of Kerala needs to articulate the policy framework under which all the people can develop their strategies. The government is now emphasizing in the population stabilization, prevention of communicable diseases and the government giving much more financial helps to the agencies of health organizations for their better performance. The public health care expenditure decreased by 35% between last ten years due to proper precautions. Some of the reasons for the health problems are shortage and cyclic changes in the availability of fresh water, regional drop in food production, and the rising sea levels etc. Climate have a major role in our health, it results the damages for flood production
and also resist the healthy life. When comparing to the other states the health programme and the health conditions of the people are very good in Kerala.

Now a day’s climate Change is a new challenge for the control of infectious diseases and public health of each area and it leads to changes in pattern of infection, emergence or resurgence disease etc. A physically fit and healthy individual will live longer, hence be more dynamic at work and school, and usually contribute more to the country’s growth. Here is the importance of the Physical Fitness Programme highlights. Those who were not involving the same were facing several diseases like blood pressure, diabetes, hypertension, heart diseases due to their lack of fitness state and poor body condition.

A sample survey were organized in Kerala under the leadership of directorate of sports and concluded that the fitness standard of our school student’s according to their age is very poor. The tool was used for measure physical fitness was AAHPERD test. To tackle this social problem, Government of Kerala launched the Total Physical Fitness Programme (TPFP), as a joint initiative of Departments of Education, Sports, Health and LSG through the Kerala State Sports Council for boosting of physical fitness status of Kerala school children.

It is well known that Kerala enjoys a status of a role model of overall development, making it comparable with the developed nations of the world in areas of education, life style patterns, positive culture and the discipline etc. If the physical fitness level of school students of Kerala is not optimal, as revealed from the statistics presented by TPFP, then the corresponding figures for the rest of the states and the national averages are expected to be less than the expected digits.

**PROCEDURES OF DATA COLLECTION**

On each day of testing, prior to samples data collection, the subjects were weighed on a standard weighing machine. Physical variables were collected first and then physiological and then finally the psychological variables were taken.

The subjects were motivated to exhibit their true performance by explaining to them the significance of this study and appealing to their professional interest and knowledge in their
respective fields. The conditions on the ground and equipment were checked as a precautionary measure.

The subjects were directed to assemble and the procedure of taking measurements in the criterion variables was demonstrated prior to actual trials of measurements was taken. The assistance was given appropriate training and trial practices for data collection were continued for a number of times till they got mastery over each measurement procedures. In this case subjects’ reliability, testers’ reliability and the instrument reliability were determined prior to the data collection procedure. Physical and physiological variables were assessed during resting condition and psychological variables were collected by questionnaire.

ADMINISTRATION OF TESTS

PHYSICAL FITNESS VARIABLES

Physical fitness becomes one of the important parts of the daily healthy life of the human being. Sports and games have its own major role in student’s healthy lifestyle. Daily exercise will improve the fitness (both mental and physical) of the human being. In the present study the investigator searching whether there is a significant difference in physical, psychological and physiological difference in different kinds of school students in Kerala state.

The results of the athletics were far better than the previous results. It is due to the progress of the new principles and the science in track and field events. Worldwide inventions are directly influencing the best performance of the athletes. The knowledge of the coaches regarding the latest development in sports leads the athletes fro their best result. The field knowledge of the coach and the implementation of the latest principles are the result makers of the present age. Both the athletes as well as the coaches should have proper knowledge of the latest investigations in the field of sports training.

Most of the scientific evidence, whether from training experience or the latest research provides the better understanding of the human body. The researchers from different sciences develop the theory and the methodology of training, and later it will be becoming the branch of the science. In order to appreciate the benefits of varying environmental temperatures and seasonal changes, it is all the more necessary to understand the mechanism of human
acclimatization to the environment, the physics of low pressure environments, and the physiological changes brought about in the body by exposure to the hot and cold climatic conditions. The activities which we are doing in different forms are effects in different demands of our organ systems and its working depends the process of circulatory, metabolic, respiratory and neurologic process which are specific in nature. The changes of the environment, altitude and the climate conditions are direct associations with the optional performance of an athlete.

Now sportsmen are able to give outstanding performance because of proper planned scientific training and the methods of different training in appropriate timing. The execution of the right techniques were improves the sports gear and condition of system of sports training. The identification of physical characteristics of sports modality contributes success and enables to differences spot among athletes of different capabilities and to provides the happy moments for both scientists and the coaches.

The research in the field of physical education, games and the sports are precious benefit to the athletes, players and the coaches. Researchers of physical education, games and the sports have modifying the new methods of training, competition strategies and the techniques to gain best performance in the competitive games and sports. Though research in physical education in India is in the stage of infancy and is a new venture, it has already reached a new height of using technical knowledge. Various experiments conducted in recent years have conclusively proved that the performance in any sports activity depends upon the psycho-physiological homeostasis and physical fitness as well as related skills of the athletes.

Physical Education, now a day is considered as an important and integral part of general education which aims at the harmonious development of the man. But, in practice and from a functional view it has proper recognition or status as an academic subject.

Many investigators are of opinion that, along with several factors, the geographical as well as climatic conditions of the place where an athlete lives also play vital role in the level of performance ability. Since the geographical situation and climatic condition in India are different from other continents, it is assumed that the performance ability of Indian sportsmen may vary when they participate in the competition being organized in different continents in world sports. Supportive incidence is being evidenced in the case of Indian athletes participating in the Asian
Games. Here, the performance of Indian athletes is comparatively superior since the geographical and environmental temperatures are approximately similar in the regions of Asia.

Although measurement of psycho-physiological functions and performance abilities in sports is a continuous process in bringing out a good sportsman, in India, research report on environmental temperature in relation to athletic performance is meager. Moreover, no investigation till-to-date is available in this direction, especially on the influence of climatic temperature on track and field athletic performance of all levels of athletes.

Fitness factors are the most important for predicting athletic performance. Natural ability is the promise of potential, but fundamentals are the foundation of excellence. Performance of an individual directly influencing the physical fitness standard of the same person. Sports performance depends largely on physical fitness factors such as the basic qualities of fitness. Some athletes require large muscle mass and bulk so it produces maximal strength, and it is an important component of fitness for all the sports. The scientific approach of the sports training articles outlines how various types of weight training programme fit together into an overall training plan. The weight training programme is designed according to each muscle as well as the capability of each muscle. The training protocol of each muscle is different to one another and it depends the muscle size or the hyper-trophy training.

Muscle strength is the ability to exert force opposite to resistance. Greater muscle strength helps to physical fitness because it allows us to more easily perform tasks. The importance of muscle strength when you performed household tasks such as moving furniture or carrying a full trash bag out to the curb. Energy liberation process in the muscles decided strength, which is a direct product of muscle contraction. Strength is an unavoidable factor in all motor abilities. Muscles contraction produces all sports movements. Training aims to increase the strength. Result of a performance is directly proportional to the resistance that is applied to the respective muscle and the resistance is higher means the performance of the body is better. Almost all the performances depend the ability of inserting greater force against a resistance. Increased strength will often contribute to better performance. Strength recognized in all physical activities and it becomes a basic component of the fitness. In all physical activities muscular strength has
been recognized as an essential element and basic components. Strength is a important component of fitness and it affects the performance.

We certainly live in the technology age and the advances we see in technology have simplified many physically demanding tasks. It can make you wonder if all of this technology has eased our physical burdens so much that one day we might be so physically unfit that we can no longer perform tasks without the help of technology. Our ability to carry tasks and routine physical activities without undue fatigue is called fitness. In the most term fit perform tasks with more sustainable energy and for longer periods, fitness is more than just the ability to work. This is a measure of circulatory and respiratory systems' ability to deliver oxygen and nutrients to and eliminate waste order to fuel your muscles during periods of activity. When cells works they produce wastes that need to be eliminate away from our body. How much faster the process of the same held will decide the measure of your cardiorespiratory endurance. We can build our cardiorespiratory endurance through the practice of planned exercise. Aerobic exercise is important because it strengthens our heart and lungs by making them work harder.

**LEG STRENGTH**

**Leg lift with Dynamometer**

Strength is one of the powerful tools of all the sports performance, and it is depends the size as well as the liberation of energy process. It is an important motor ability for all sports activities and its ability is the product of muscle contraction. Generally all movements of sports are caused by muscle contractions. So strength is one of the integral parts for all the motor abilities in sports. Systematic planned training and the skills are the major factors for getting maximum result in all the sports activities. Strength training is also useful for general healthy life span, and it maintains good posture and also prevents many injuries.

Strength is the production of maximum force for a single effort. All sports require a limited amount of strength capacity, but the strength has priority in sports as like heavy weights. The muscle cross sectional area are depends the muscle strength. The larger the muscle, produce the stronger in force. The muscle will get the contractile protein by the strength training for pulling power.
The one of the objective of maximal strength training is to increase the maximum level of force an athlete wants to produce. Almost all the sports activities are directly relating to the production of explosive power, endurance of the muscle or the combination of these two for their better result. Strength and the speed is together to form the explosive power. At the same time the combination of the endurance and the strength is muscular endurance. If the athletes are producing more force and maximum strength means leads better performance.

Hypertrophy is the enlargement of the muscle fiber and it is the result of the equilibrium in between the ATP remanufacture and the manufacture function. This process is called as ATP deficiency. Maximal strength training includes the maximum load and the minimum of repetition along with the long duration of rest period. It will be prevents ATP deficiency and significant hypertrophy occurring.

Maximal strength can be develop through relatively heavy loads must be used - greater than 85% of the 1RM. This allows only small counts of repetition as like 1 to 5 for the respective set. Each lift should be poses maximum effort for best result.

To further aid recovery and allow maximal effort to be performed a vertical session design is preferably one set should be performed in a sequence and repeated rather than completing all the sets for one exercise before moving to the next one. The athlete’s full concentration should be needed for his lift. The perfection of the bar is not to be considering here, the exceptions are permitted for better training programme. The faster lift was recruiting the highest number of fast twitch motor units for the training. It also improves the quick movement of the fibers and results the explosiveness.

Lower body strength is essential for all kinds of our common movements. The supportive muscles of upper leg muscles and the lower leg muscles can improve by systematic training. Machine training and the weight training are leads to develop the lower extremity. The systematic resistance training should have its own schedule with enough repetitions and sets. The planning and preparation of the training schedule is one of the prime works for the strength training. The repetitions are commonly allowing 8 to 12 times for each set and taking rest between the set.
Leg muscles are among the largest in our body and working them out can provide a significant metabolic effect on body. Aerobic forms of leg workouts such as running, walking and cycling will help to encourage our leg muscles to grow. Metabolism, however, only accounts the weight loss in small portion and the decreases the caloric intake to sustain long-term weight reduction.

Exercise that includes leg workouts helps to increase and maintain density of bone. This will help to prevent osteoporosis. In addition, legs strengthening can lead to weight loss that causes less stress on our joints. Strength increase in our legs can be accomplished by performing exercises such weight training and the leg press, with weight squat etc. are increasing the resistance power of leg muscles and lead to adaptation condition.

In sports, maximal muscular strength and power represent essential elements of physical performance. Strength is one of the important component of physical fitness. Almost all the sports performance directly affects this quality of an individual. One of the main objectives of the strength training is not to learn to lift maximum weight but to increase the strength for application to the relevant sport. This is possible only when the coaches and physical education teachers use the correct and most beneficial and economical means to train their sportsmen.

Strength is a fundamental requirement for all the daily physical activities of children and the adults. Strength training is the use of progressive resistance exercise method specifically for increase the strength. Leg strength is very essential to all the sports persons as like athletes and football players. The larger the muscle, the stronger it is. By comparing strength to performance, it is possible to determine the need for additional strength.

**Purpose**

The purpose of the test was to measure the leg strength.

**Equipment were used**

Leg dynamometer

**Procedure**
The subject was instructed to stand on the leg dynamometer machine. He was asked to hold the center of the bar, palms down at the level of the pubic bone, with the head up back straight and bent knees. The handle was hooked on to a chain so that the subject’s knee was flexed between 115 and 125 degrees. The bar was kept on the subject’s thigh during the lift. The subject was instructed to place his hand either in the middle or the end of the bar. The subject was then asked to lift the knees straight up. At the completion of the lift subject’s knee joint was almost completely extended to ensure maximum effort. (The starting knee angle was approximately 115-125 and ended closer to 180 degree).

EXPLOSIVE POWER

Standing Broad Jump

Explosive power is defined as the rate of expenditure of energy in a short while. The long jump would appear to be one of the most basic events of all track & field events. For these skills the athletes should need a combination of skill related fitness components. While attempting he should try for leap as far as possible from the take off point. Explosive power is the ability of the muscles or a group of muscles to overcome resistance with maximum speed and effort. Explosive power represents one of the important aspects of athletics.

Power development is one of the indeed aspect for these skill and it is a part of neuromuscular properties. The athletes those who need quick actions should give priority for the quality of explosive power. It is characterized by one short burst of or energy and is seen in such test as standing long jump vertical jump and ball games. The strength of the muscles in the limbs is the controlling body of our movement as well as the support for the weight barrier for all kinds of works. These kinds of strengths are coming under the category of dynamic strength. Explosive strength and dynamic strength involve movement of the body of its limbs. In other words we can reach the conclusion that the muscular strength is directly or indirectly relating to the peak form of the performance. The primary functions of the foot muscles are helps for proper contract and which result in body movements, muscles are the only body parts which can causes movements.

The strength of the muscle is relating to the contraction of the muscles fibers. Be conscious and vigilant in avoiding injury is the basic thing regarding muscle strength.
Neuromuscular system can be developed by applying stress to the muscles or to the neural aspects. One must improve the explosive strength of the concerned groups to improve the speed performance. A decrease in strength will affect the range of speed. We can improve speed by giving more and more training and emphasis on the explosive strength, which mainly rely on muscles, co-ordination, muscle size and composition. It was also depends the metabolic process in the respective muscles. All these factors expect muscle composition, can improve through training procedure. There is some evidence that strength developed dynamically makes a better contribution to speed than strength developed through statically.

Power is the combination of speed and strength. If we need to increase the power means we should improve the both qualities. The balancing of the both skills will lead for best performance of power. Strength and speed are directly relating to the involvement of the resistance training and in other words we can say that the high resistance training were the best contributor of heavy strength in the competitive sports. An abundance of research support the idea that increased strength does not detract from speed as some have claimed, and it often has a positive influence on speed, with the influence becoming greater as the resistance is increased. There is some evidence that strength developed dynamically makes a better contribution to speed than strength developed statically.

The biggest benefit of broad jump training for athletes is that it improves the reaction of fast-twitch muscle fibers all through the body. Effective, broad jumps require your leg and core muscles to contract very quickly like other plyometric exercises, so that you can generate maximal force with each leap. Power can be determined instantaneously at any point in a movement or average for any portion of a movement or bout of exercises.

The length of the jump is directly relating to the great effort that applying to the ground. Good length is relating to the combination of both the power and the strength. In turn, the explosive power mainly depends upon one’s leg strength. Standing broad jump is used as a test to measure the explosive power among the selected subjects. Explosive power represents one of the most important features of track and field in sports.

Purpose
To measure the explosive power.

**Equipments were used**

Steel measuring tape, chalk powder.

**Procedure**

The researcher was given proper instructions to the students about the skill of standing broad jump. The subjects were permitted enough practice sessions for their skills, before the actual measurements. A horizontal line was marked near the long jump pit. The subject stood behind the line facing the pit, with feet parallel and then swinging arm forward, crouched position with knees bend around a right angle. Then the subject jumps maximum possible distance. The distance between the nearest break point to the horizontal line was recorded as subject’s performance in the nearest centimeters’.

**SPEED**

**50 Meters Run**

Speed component of anaerobic metabolism lasts for approximately eight seconds and should be trained when no muscle fatigue is present. It is the quick leg movement of the athletes as fast as possible. Speed is considered to be an integral and essential part of every sport. The 100 meter dash is the margin sprint race in track and field competitions. This is considered to be the shortest common outdoor running distance. It is one of the most trendy and high-status events in the sport of athletics. 100 meter dash measures one’s sprinting ability, explosive strength. It is important to remember that the improvement of running speed is a complex process that is controlled by the brain and nervous system. Speed is influenced by the mobility, particular strength, strength endurance and technique. Downhill sprinting, speed, reaction drills is the common methods of developing sprinting speed following the acceleration phase.

The speed is which is essential for many physical activities. Speed is a determining factor in the explosive sports such a sprints, jumps and most field events. It is one of the major quality for competitive sports and games. The muscle contraction is the process to generate the energy for works and it is an innate quality for each individual. Speed is a un avoidable factor for the
games like football, hockey and the basketball. Speed is the capacity of an individual to perform successive movements of the same pattern at a faster rate. Hardayal Singh has quoted that the speed is the performance per-requisite to do motor actions under given conditions (movement task, external factor, individual pre-requisite) in minimum time. Strength is highly related to speed. Without speed there are no sports and physical education.

Speed ability is highly movement specific. The quality of speed is directly relating to the contracting ability of the muscles. The quickness of the contraction speed is directly relating to the performance of speed. It was fully under the control of the neuromuscular systems and it is the unique character of the physical component.

As a result of this, speed is more complex in nature and is comparatively less trainable as compared to strength and endurance. Speed is related to the percentage of fast switch muscle fibres in the athlete’s body, because the quantity of fast switch muscle fibres is partially inherited. It is difficult to improve significantly an athlete’s speed. However, it can be done. Speed of movement can be gained through practice. Speed is the rapidity in movement and it can be tested with 50 yards run.

While most people involved in sports training accept that the speed is a quality someone is born with, but it does not mean that it is not trainable. A person is born with an ultimate speed potential and only through planned training can this potential be fully realized, although the performers must be encouraged to adopt the attitude to achieve the ultimate potential. At any stage in a player’s career he or she must always function with the belief that they can produce faster movements.

Athletes should be tested for speed twice per month on either a 40-yard (37-meter) or a 20-yard speed run. The timing in right time wants to note in separate chart and can check the progress. And also need to give the trials of 75 to 90 intensity speed for these race and three trials are giving and note the best time should record in a book. Normally the sprint workouts extends 10minutes duration and the first five minutes is for technique part and remaining part for improve the weakness of the athletes. The technical part can analyse and rectify by using the video process. The proper sprinting technique is essential part for the best result. The remaining five minutes of the speed workout should be devoted to doing 10 all-out quality sprints at
distances ranging from 10 to 50 yards. The runner should maintain about 30 seconds rest between sprints so that they are breathing easily before their next sprint.

The drive phase happens after you react for the starting signal. The initial steps are known as the drive phase and the problem from the part of the athletes is that they 'trying' to stay low. When athletes try and stay low they normally hold themselves down by breaking the movements of the hips. There is no doubt this will resist the formation of energy and the reflection from the ground. The acceleration also is breaks due to the same. The body should be straight and the back should be erect deviates due to the incorrect methods.

Since the acceleration phase (0-30 yards) is associated with a higher stride frequency followed by maximum speed and the athletes are themselves doing too much quick in their legs. It will be lead the incorrect movement of spinning speed instead of drive out.

One of the hardest things about running is trying to stay relaxed during the time of running but most of the athletes have the misconceptions that in order to run faster we want to run harder. But it provides the negative result for the sprinter because of the tension of the body. It can easily findable from their facial expression itself. The smooth running provides tension less facial expression to the athletes. The cheeks flopping up and down of the athlete is one of the positive symptoms of the best relaxed race.

The arms play a significant role in the sprint running race. The smooth and relaxed flow of the arm action leads to better result in sprint. The role of the arms is to stabilize the torso so that power can continue to be efficiently transferred through the hips. The ability of transfer power effectively through the centre of mass not only improves the rate of maximum velocity but also all other supportive qualities of the sprint performance. The smooth and correct arm action directly or indirectly influences the ability to run fast. There is a dialog about the smooth flow of the arm movement in running skill is that, while running if potato chips are placing in between the arms means that should not be break during the swing of action. It proves the importance of the arm action while the sprint race.

While sprinting, it is important to get a full range of motion from the side of arm swing. Speed is relating to the factors of stride length and the stride frequency. Both of this qualities
should need to balance as a limit for maintain the best performance. These two qualities of stride frequency as well as the stride length are directly relating to the proper arm swing. If we are lazy or passive with our arm action, definitely it will limit our potential for speed.

The front arm elbow angle should be between 60 to 90 degrees and the back arm wants to maintain the angle around 90 to 120°. Whenever the angle have more fluctuation from the above mentioned ranges were lead for negative result and it will interfere the smoothness of the running mechanism. In short, they will run slower and chance for the tiredness is more than of the normal condition. The constant awareness of the shoulder and elbow movements while in training will lead to reduce the mistakes. The mistake correction and the systematic running rhythms are the byproduct of the great effort from the side of the athlete as well as the coach. The normal movement or the range of motion of the arms should be from hip to cheek. That means the back side the arm want reach around hip level and in front side maximum up to the level of the cheek. There is no specific or fixed point for this motion it will depend the comfort ability of the athletes. Irregular movement of the arm should lead to injury possibility as well as less maximum possible positive result.

When running, emphasis should be placed on driving the elbows properly downward and backward. Sometimes the runner fire their arms movement straight backward and avoids the first driving them the down. This skill also incorrect and leads to bunched up the irregular movement of the shoulders. It further leading for tight the normal limits or the range of motions. This is one of the important aspects to focus on the proper driving the arms back as they are recovered elastically by the stretch of muscles in the shoulder. So, do not drive the arms up and forward because stretch reflex is going to bring them forward anyway.

Another aspect of arm action is to avoid lateral deviation beyond the sagital plane. What this means is that our arms, when they are brought in front of our body, it should never cross the midline of our body. The right arm should stay on the right half of our body and the left arm should be stay on the left side. When we move our arms laterally, across the midline of the body, it will rotate our hips which basically burns much needed energy and makes to run slower and get tired faster. The mistakes should be corrected in right time at the area of training station not in the competitive site.
Stride length and the stride frequency are the two major factors for the speed. The greater the stride frequency and the stride length results the better speed performance. The speed of a sprinter depends upon the length of the stride. Stride length, an important characteristic of a sprint, notably depends upon the length of the legs and the range of movement at the hip. Leg power is also associated with stride length. A long distance runner will run with a short stride and will depend on pace and lower stride frequency to conserve energy. In addition, there exists a complementary relationship between the force exhibited by the legs at push off and length of stride. There is some evidence that strength developed dynamically makes a better contribution to speed than strength developed statically.

**Purpose**

To assess the maximum speed of the subjects.

**Equipments**

Stopwatch, chunnam, score card.

**Procedure**

The subject standing behind the starting line and start the running race after getting the command of “ready” and “go”. The starter also follows a downward sweep of the arm as a signal to the time keeper. The time keeper stop the stop watch whenever the torsos of the subjects were crossed the finish line.

**Scoring**

The score was noting the digital display of the time in the stop watch.

**FLEXIBILITY**

**Sit and Reach Test**
Flexibility is defined as the ability to move muscles at its full range of motion. Due to weak or tensed muscles people suffer from low back problem. The daily activities demand a great deal of strain on those activities. The inability results in loss of flexibility, the inability results in loss of flexibility, sitting for a long period also results the same. People who perform occasional physical work develop back problems. The physician prescribes suitable exercise giving emphasis on stretching exercise.

All our general movements in our common life are directly relating to the physical components of flexibility. To do our general movements like get out of the bed, lifting the children or while sweeping inside the home etc. we should as a limit of the range of motion from our body parts. The special capability of the muscle and joint flexibility is that, it will reduce the capacity while in age. If we have not adequate flexibility means will lead to resist our smooth performance of all actions. The restless works or the over lime work without sufficient rest will lead to reduce the ability of flexibility of joints as well as the muscles. Keeping touch with the proper stretching and minimum maintenance work for our joints as well as the muscles are leads to better life for our joins and muscles. If we have enough flexibility means will reduce the complications of the injuries as like back pain, knee pain as well as joint pains etc.

The range of the flexibility determines the performance of the specific activity. The role of the flexibility not only relating to the athletes, it should be needed for the healthy life of the common people. Flexibility is depends all our common movements in daily life. There are lot of evidences are there to point out the role of flexibility in better result of the alight athletes. Insufficient flexibility leads for muscle injuries and tightens the joins motion. Each and every sport activities have its own specific training for improve the quality of flexibility. The maintenance of the flexibility exercises are develops the tone of the muscles as well as the ligaments. If our muscles as well as joints have enough flexibility means automatically relax our mind and we will get positive energy from our psychological mechanics and also get best result from our performance.

After a heavy work load the relaxation is an essential part for the smooth functioning of the process of adaptation. During this time can concentrate the training of flexibility. The
muscles and the body parts are already warmed in condition and the flexibility training will affect in proper way. Systematic flexibility training will lead to following benefits,

1. It reduces the muscle stress and also releases the muscle tension while developed in the workout sessions.

2. Assists the posture by balancing the total body as well as the skeletal systems. And also reduces the stress to the joints and lead for maximum strength for the joint movements.

3. Good joint flexibility will reduce the chance of injury for respective muscles as well as the joints.

4. Proper flexibility will lead for better result for training.

As compare with other training, flexibility has its own features for the training are,

**Frequency of Flexibility Training**

Flexibility influenced by the proper stretching activities after the heavy work outs. Active recommendation for the flexibility training is 4 to 7 days per week.

**Intensity of Training**

The aim of the training should be improve the quality of movement of the respective muscle as well as the joints. The trainees should practice proper breathing techniques while doing stretching exercises.
Duration of the Training

Generally the flexibility training will be extends 5 to 10 minutes duration. It is one of the work-out, if the drop-out of the practice will lead for injury in the respective body parts as well as the muscles. Flexibility training should be become the part of training programme and the coach should plan the specific duration of the training of flexibility. Normally the athletes are wind-up their training programme from the ground works itself. The lack of knowledge of the need and importance of flexibility as well as the flexibility training will leads the athletes to complicated state.

Flexibility Techniques:

To increase or recover the muscle capability the flexibility training is one of the best medicines. The over load of the flexibility training will give the further stage for the muscle power as well as the stretch ability.

There are two types of flexibility is there, static and the dynamic. Both were doing according to need and the nature of training.

Static Stretching:

Static stretching normally involves the stretching and holding process of a joint or the joints for at least 15 to 20 seconds duration. The process will be repeating two or three times according to the training schedule. The aim of this type of stretching is to improve the quality of strength of the joints. This skill is repeated without any over stretching for the respective joints. All the joints should be stretched according to the need of the activity. The major joints involves as like, hip, shoulder, back. The tension of the stretched muscle gives relaxation for the antagonist muscles. And it balances the process of agonist and antagonist muscle works.

Advantages:

Anyone can do this skill without any strain of pain. We do not need any external support of equipment for to do this skill.

Disadvantages:
It improves the flexibility for a specific body position. It will not improve the quality apart from the specific part. The athlete should know the characteristics of that specific joint before doing the activity. He should need the knowledge about the joints as well as the characteristics of specific part.

**Dynamic Stretching:**

This method of training of flexibility includes the dynamic movement of stretching. This kind of movement increases the quality of lengthening the muscle and gives priority for agonist as well as the antagonist muscles.

With low muscle tension we can do the skills and it improves the quality of joint movements. It will begin with slow pace and dynamic in rhythm. Gradually increases the pace of motion. This method is one of the best methods before beginning the real activity.

**Advantages:**

This stretching is doing before starting the actual activity. This type of stretching involves dynamic in nature and while warming up for speed activities and is best for produce good result.

**Disadvantages:**

This type of stretching begins from low movement to gradual improvement of motion speed. So the increment has its own role, and the athlete should aware about the increment of the motion from low to speed. The irregular movement will lead for the negative result.

**Importance of Flexibility**

Flexibility has an important interrelationship with other performance factors.

1. Flexibility is a necessary prerequisite for maximal development of movement force and speed.
2. Good flexibility helps in achieving higher movement economy.
3. Flexibility is indispensable for prevention of injuries.
The best age for the development of flexibility is before puberty. For good effect each muscle group must be stretched at least 10-15 repetitions. Flexibility training should aim at optimum flexibility not maximum flexibility. Stretching exercises should be done when the sportsman is fresh. Flexibility exercises can be done daily or even twice a day for faster improvement of flexibility.

**Purpose**

This test is designed to ensure the Flexibility of the low back and posterior thigh.

**Equipment**

Scorecard and pencil, sit and reach test box.

**Procedures**

The subjects should remove their shoes while doing the test. To begin the test, the subject sits in front of the test apparatus with feet flat against the board. The knees fully extended and feet should be keep shoulder width gape and perform the test according to as per the instructions of the tester. In this case the subject should extend the arms forward with one hand placed on top of the other and placed over the reading scale. The reach was repeated 3 consecutive times and selects the best one result.

**STRENGTH ENDURANCE**

**Bend Knee Sit-ups**

Strength endurance differs from person to person and which is widely used in sports. The sustainability is the meaning of the term, according to a sports person. Energy supply is mandatory by the circulatory and respiratory system to maintain the sustained activity. To test the efficiency of heart and lungs during physical activity along with fitness tests cardiovascular tests can be used to perform the daily activities and tasks, strength is important. Serious injuries can be avoided, if a person is strong when an emergency comes and can be escaped from harm.
Strength endurance is very need of all the competitive sports and the specific form of strength displayed in activities which require a relatively long duration of muscle tension with minimal decrease in efficiency. Strength endurance has different in role according to the nature of the sports. According to the nature of the event the strength is useful as like dynamic in nature, static, local or general endurance.

All forms of competition not depends the strongest men for victory, it is not the permanent chance for a champion. The formation and the production of strength in right required time will decide the quality of performance of the winner. If we need more power means, we should develop all types of our muscle fibers for that. If it is prepared means, it will provide the best result in right time.

The fast twitch muscle fibers create maximum power output in the explosive sports such as sprinting and weight related activities. Slow fibers has prime role in long distance aerobic activates. The combination of the strength as well as the endurance training with appropriate speed and angles produces strength endurance. Another aspect to this particular strength continuum is dynamic and static strength endurance which can be improved by proper and systematic planned training.

Dynamic strength-endurance is also much needed to perform maximum and it is typically associated with cyclic exercises in which considerable tension is repeated without interruption during each cycle of movement. It is also apparent in acyclic events requiring maximum power repetitions with short rest periods between such as jumping or throwing activities.

Static strength-endurance implies isometric tension of varying magnitude and duration or in holding a definite posture. And also it is associated with the relatively long or short term sustained muscle tension and its long duration in each case will determine the magnitude of the same. In these two cases the muscles are depends, about how many muscle groups are involved in the activity.

General strength endurance is normally built around the utilization of large muscle groups to power the activity such as the case with rowing, where for example the quads, gastronomies, biceps, triceps, deltoids and the Latissimus dorsi muscles predominates the scene.
In local strength endurance, a particular muscle group is targeted for improvement based upon its use in the sport.

If measuring absolute strength endurance then the overall result would not consider the level of development of the different motor abilities. The required object of the measurement is partial endurance then "the level of development of specific motor abilities calculated when the influence of other abilities is in some way excluded".

As a practical matter when determining partial endurance in strength exercise a weight requiring exertion at a percentage of one’s maximum one repetition which is used. Normally it will come in static in nature or moved to failure in a repetitive level, that indicates the dynamic strength endurance quality. An incomplete index follows if there is either no correlation with maximal strength or a negative correlation between the selected two tests. If the same person is ready to raise the same weight the relationship to absolute strength and maximal strength has a high correlation.

Special work capability of strength endurance is expressed mainly in the powerful repetition works in a constant manner for a long duration. In cycling race the athlete continues cyclic movement and in running races the athletes of long distance runners running prolonged time with same kind of motions. Wrestlers, boxers, kabaddi players, football players should need their own respective speed endurance for best performance. Forming the base of strength endurance is general or normal endurance. One of the important way for develop the quality of strength endurance is under the most demanding conditions and that is through the simulation of contest conditions or in high level of volume works. This kinds of motions are not required special strength exercises to help build the strength base of the athlete.

In athletic and sports movements muscular endurance provides great success, muscular endurance the ability of muscles sustain the contraction fore an extended period of time is vital for athletes and sportsman. The above said factors depends for how well one’s slow twitch muscle fiber are developed. Dynamic and static endurance are the two types of muscular endurance. The first one is muscles ability to contract and relax repeatedly. And the second one that is the static endurance is the ability to regain contracted for a long period. There are three
categories of muscular endurance first one is power endurance, second one is short term endurance and third one is long term endurance.

**Purpose**

To measure the strength of the abdominal muscles.

**Equipment**

Mat and stopwatch.

**Procedures**

The subjects lay flat on the back with knees bent and the feet on the floor with the heels not more than 30 cm from the buttocks. The knee angle should not be less than 90 degrees. The fingers were interlocked and placed behind the neck with elbows touching the mat. The exercise was repeated as many times as possible in one minute.

**Scoring**

One point was scored for each correct sit-up. The score was the maximum number of sit-ups completed in one minute. Three trials were given and the distance of the maximum reach was recorded as the test score.

**AGILITY**

**Shuttle Run**

Change of direction is said to be agility. This quality may be necessary for better achievement in certain games. The common tests of this parameter involve such tasks as the zig-zag run for a time through a maze of obstacles or shuttle run. Agility is the ability to change direction and position quickly without loss of balance. It is increased through participation in a varied assortment of activities. Specific agility training would involve a quick change of position and direction in rapid success. Some examples of agility exercises in connection with track events are, reaction exercises, agility runs, and exercise on balance beam against time etc. Agility can be measured by clocking the timing for 4 x 10 yard shuttle run. Its display becomes essential
in such movements as dodging zig-zag running, stopping and starting and changing body positions quickly. The term agility has been gradually replaced by the term coordinating abilities. The agility or coordinative abilities are primarily dependant on the motor control and regulation processes of central nervous system. Coordinative abilities are understood as relatively stabilized and generalized pattern of motor control. This enables the sportsman to do a group of movement with better quality and effect. Agility should required the combination of following qualities,

Ladder programme is one of the best prescription for improve the quality of agility. The main objective of agility ladder programme is to promote a wide range of different foot and also the foot movement patterns. These skill practice provides second nature and the body will be able to respond quickly to various sport specific movement patterns.

With the use of an agility ladder we can improve our agility by practicing different movement patterns by training. Generally the length of the ladder may be 10 yards and each square may be having the measurement of 18 inch squares, but you can construct your own ladder according to our need and use. In the beginning stage start with 2 to 4 drills and once you master these then introduce new drills.

**Speed** through a ladder can indicate much about the participant’s quickness. General prescription timing for the male and female were 2.8 seconds and 3.4 seconds. They should cover the length of a 20 rung ladder and also only one foot in each rung at a time. This may be considered as excellent performance for the senior athletes.

**Purpose**

To measure the agility of the subject.

**Facilities and equipments**

Two lines which are 10 yards apart were drawn the cinder track.

Stopwatch, clapper and two blocks of wood.

**Procedure**
Two parallel lines, 10 yards apart, were drawn on the cinder track. Two wooden blocks were placed on the opposite line. The subject was asked to stand behind the starting line and was also instructed to start with standing position. On hearing the ‘clapping sound’ the subject was asked to run towards the block and returned back to the starting line, after picking up one block. Then the subject has to do the same process for the second time.

**Scoring**

The time has taken for the course was recorded.

**BMI (Body Mass Index)**

To maintain the good health a proper ratio should be maintained between the lean weight and fat weight. The excessive accumulation of the fat may results for obesity. Occasional physical work also results the risk of obesity. Younger generations were more obese than the older generation because of the sedentary life style. Decreasing the total body fat is the only way to avoid the condition of obesity. For this we have to change our life style along with proper exercise. Decrease the intake of the fats, sweets and excessive calories.

The devolved nation’s obesity can be seen in youngsters only due to the negative attitude towards the physical activities. Lack of dietary control also results obesity and it should be control as a limit with proper counseling of the parents. At present the word obesity means over fat which derived from the Latin word ‘to over eat’. Now a days the whole world is threaded because of the over fat in the new generation due to the lack of physical fitness. It is because of the sedentary life style of the new generation. Lot of cardiac problems is because of the obesity. Proper exercise is the only one formula that can stop the problem. So the unity between the government as well as the institutions are very much importance for solve this problem.

Body Mass Index (BMI) is calculating with the help of height and weight of the persons. The values want to put forward to the formula. These calculated values can compare with the norms already prescribed for the respective height and weight of the persons.
BMI helps know the condition of the body fat. And it can measure with the help of the calculations. There are so many ways to assess the body fat as like under water weighing method or x-ray method are the best examples for the same. Right now the body condition and the body structure have more value in the social well balanced life. Fatty fellows are facing psycho and physiological problems to their day to day life. BMI also used as a test tool to measure the possible weight problem of the adults, actually it was not a standard tool but it was follows.

Calculating BMI is one of the best methods for population assessment of the obese community. This calculation requires only body weight and the height measurements. So the calculations are chip in cost and easy for time conception. This calculated value will give the outline of the people and their health status.

**Purpose**

To measure the Body Mass Index.

**Equipments Used**

Scales or Stadiometer was used to measure the height and weighing machine used to measure weight.

**Procedure**

BMI is calculated from body mass (M) and Height (H), $\text{BMI} = \frac{M}{H^2}$, where $M$ = body mass in kilograms and height in meters.

**Scoring**

The following table is used to determine the BMI rating of the individual. These classification systems were framed by the World Health Organization. The rating scale is the same for male and female. One can also use the reverse lookup BMI table for determining the ideal weight based on height.

<table>
<thead>
<tr>
<th>Classification BMI (kg/m$^2$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Weight &lt; 18.5</td>
</tr>
</tbody>
</table>
Normal Weight 18.5 – 24.9

Over Weight 25 – 29.9

Obesity 30 greater

**PHYSIOLOGICAL VARIABLES**

Physiology is a discipline that focuses on how an organism responds to exercise. The exercise represents one of the greatest stresses that an organism can encounter. A good athlete always wants to do work for a long time. So all the organs in his body should work in perfectly represents one of the greatest stresses that an organism can encounter. Therefore, the exercise represents an outstanding model for studying human and animal physiology people are familiar only because it is related to the sports performance. Involvement of specific training will make the all the organism to do the needful thing to the body Exercise Physiology is one of the major sub-disciplines of Sport and Exercise Science, and evolved from its parent discipline physiology. Now a day’s sports physiology is deep relationship between the cardiovascular cardio respiratory, metabolic and neuromuscular adaptations to exercise and training. Advanced biochemistry is also giving help to perspective health and fitness.

It is an established fact that a ‘sound body’ alone cannot do much in the absence of a ‘sound brain’. In competitive situations, the competitors are exposed to a variety of stimuli or situations which require a very quick and accurate analysis of the adequate manage the task. The competitor possesses the ability of sharp memory, and high intelligence always has an edge over those competitors who lag behind in these abilities. In some of the individual sports events, it may not to be the same extent these attributes are greatly needed in team games.

Training increases vital capacity, the maximum volume of air the lungs exchange in one respiratory cycle and aids materially in establishing economy in the oxygen necessity. The process of intake of air into to the lungs and expelling out of the air constitutes one respiration (external and cellular) here external respiration is one taken into account, means taking in of air into the lungs and expelling it out, constitute one respiration. The most important of respiration in athletics is the capacity of respiratory rate, which is very important for runners, which increases or decreases the time of the run.
In athletics, the time taken in one respiration is high, the capacity of the lungs, respiratory system is in anaerobic activity’s performance will be increased and aerobic activities, recovery period will be higher. The different people and in the same person sometimes the heart rate may vary in different situations. IMA accepts as normal a range from 50 to 100 beats per minute. Some endurance athletes with very strong and efficient hearts have rates as low as 45 beats per minute. Women have heart rates 5-10 beats faster than men. This is primarily due to their size. Good cardio respiratory condition would be indicated by a pulse rate of 60 for women and 50 for men. The lower level of pulse may help to perform the sports in better way.

The best training is achieved simply by carrying out the activity for which one is trained, physical training may influence a number of the factors, which constitute physical performance, capacity, and that is, it may cause changes not merely on muscle strength and through both the mouth and nose. Force deep breathing is often done by runners, just prior to the start of the race. The purpose or importance is to build up a maximum store of oxygen in the blood and lungs. Breath holding time is the time taken by one who holds his breath at rest. Most of the athletic events are perform with the breath hold, notably in swimming.

The human beings are designed to be active creatures. It is important to be aware of the requirements for the good health and to recognize the importance of vigorous physical activity in the life. Regular activity increases strength and power and develops endurance for straining work. Physical exercise contributes to improve the posture and appearance through the development of proper muscle tone, greater joint flexibility and good feeling of well – being. It generates pure energy and thus contributes to greater individual’s productivity for both physical and mental tasks. Physical fitness is not entirely a dependent exercise. Desirable’s health practices also play an important role. The person who is physically fit has more strength, energy and stamina; an improved sense of well being; better protection from injury and improved cardio respiratory functions.

**PULSE RATE**

Pulse rate is nothing but the pressure that transmitted in the form of a wave. The pulse rate is almost the same as the heart rate. In order to diagnose whether a person is in good health
or not, the pulse rate is often used. The best pulse rate is measured in the morning, when the heart is at rest. The heart rate will rise with the age and lower in fit people.

The character of exercise will affect the pulse rate when the person involved in physical activity. The study of the pulse is called sphygmology. A normal pulse is regular in rhythm and force. The heart rate is same as pulse rate it is calculated by the number of times a minute that our heart contracts or beats or in other words, how many times the arteries expand and contract in response to the heart in one minute.

Pulse rate checks with the help of radial artery check. The time wants to care for one minute duration. If we are checking the pulse for fifteen minutes means should multiply the count with four and convert it to one minute. A normal individual have around 72 beats per minute. The pulse rate will change according to the age, body condition as well as the fitness of the person. The emotional changes also affecting the rhythms of the heart beat. Sad situation, angry situation, pleasure situation etc. are the example for the different situation for become the fluctuation of the heart rate. The systematic work out for the muscles of heart gives strength as well as the fitness for the heart. The fitness of the heart will decide the rhythm of the heart in one minute. Proper knowledge about the heart beat will helps to us to know about our physical fitness standard.

While checking the heart rate from radial artery, we should place our two fingers on the radial ulna and count the rhythm for one minute duration. The awareness of the heart rate in regular life will help to us to find out the health problems as well as the body condition fluctuation from the normal rhythm.

The pulse rate of athletes who are training regularly is lower than that that of less enthusiastic people. A middle aged people maximum heart rate during exercise is between 160-180 beats per minute. Athletes who have done a lot of training may see their resting heart rate fall below 65 beats for every minute.

It is the general view that cardiovascular fitness mainly dependence of the pulse rate, blood pressure which is said to be cardio respiratory fitness. The good cardio respiratory function is needed to improve the optimum level of performance and is possible through systematic
training programme. A disease free healthy and wholesome life is the concern of all perplex. In this competitive world, people are always litigated by stress and strain which later lead to physical and physiological complications, it is a known feel that a regular practice of physical exercise or Yogasana relaxes the mind and brings down the mental streets and physical strain.

It has also been established that the pulse rate will decrease the quality of physical condition like. Vital observes “How high the heart rate is when the body is at rest how living it climes during various in the sites of exercise and how quickly it reforms to it ‘starting rate following different levels of exercise are good indication of the gourd heart condition and working capacity.

Heart rate is the amount of heart beats for each unit of time. The heart rate may vary according to the intensity of activity, as well as the need to sop up oxygen and excrete carbon dioxide. Actions that can irritate alter contain physical exercise, sleep, anxiety, nervous tension, disease, ingesting, and drugs.

When the heart is not beating in a normal mode, this is referred to because of an arrhythmia. The normal resting adult human heart rate ranges from 60-100 bpm. Brady cardiac is a slowing of heart rate, distinct as below 60 bpm. Tachycardia is nothing but heart rate moves in a considerable pace, distinct as above 100 bpm at rest. These abnormalities of heart rate occasionally, but not at all times, show illness.

Resting heart rate is the pulse when we are calmly lying or sitting in condition. The best time for measure the resting heart rate is the time before going to the bed. Generally for an adult of 18 and the older people have the normal resting heart rate is around 60 and 100 beats per minute (bpm), depending on the person’s physical and age status. At the same time the condition of children for the age of 6 to 15 having the resting heart rate in normal case was between 70 and 100 bpm. These all are the standard norm of the AHA.

But a heart rate lower than 60 doesn’t necessarily mean you are in heart complicated situation. Active people have the heart rate is lower than of the normal condition it is due the efficiency of their heart. Their heart muscles don't need to work as hard to maintain balanced
state. Those who are involving in regular aerobic related activities have the resting heart below or near to the 40bpm.

There is no definitive medical advice on when a resting heart beat is too high than the normal, most of the doctors were agreeing that the systematic heart rate in the upper levels can put too much stress on the heart and related other organ systems. Knowing our heart rate during workout sessions can help to know whether the athlete doing too much or not?, Whenever the people exercise in their "target heart zone," they achieve the most benefit for improve their heart's health as well the efficiency. The work that leads the heart rate is in target zone will push our heart muscle to get very stronger.

According to AHA, a person's target heart rate zone is between 50 percent and 85 percent of his or her heart rate maximum.

Most commonly, maximum heart rate is calculated by subtracting our age from 220:

220 - Age. For a 40-year-old man, the maximum heart rate is: 220 - 40 = 180.

The target zone heart rate for a 40-year-old person is in between 50 and 85 percent of his or her maximum heart rate:

50 percent level: 180 x 0.50 = 90 bpm

85 percent level: 180 x 0.85 = 153 bpm

The formula for maximum heart rate works well for people under 40 but for older people it may overestimate and for older people the modified formula is:

208 – (0.75 x Age)

Digital watch systems of heart rate monitor also available in markets, it wants to tie on the forearm and the supportive instrument should be tie on the chest. The watch will point out the heart rate, maximum heart beat and the expenditure of the calories etc. this is most effective for measure the intensity of the training load as well the effect of the respective training etc.
Pulse rates can spike due to tension nervousness, dehydration and the stress etc. if we are sitting in comfortably and going to start deep breathing means the condition will come back slowly to the normal position. If we are doing regular exercise means the heart rate and the fitness also will be improve systematically.

Some people have confusion about the high blood pressure with a high rate of heart beat. Really the blood pressure is the amount of the force that applied to the blood to the walls of the blood vassals and the heart beat is the number of times contraction of the heart in each minute. Actually there is no direct relationship between the high BP and the high pulse rate. There is no necessity for improve the pulse rate for improving the BP and vice versa.

Depends up on our activity, heart rate varies. Heart rate shoots up with effort - to bring more oxygen and energy for the workout. The pulse can be instituted on the side of the collar, on the within of the elbow, or at the wrist. Most people, it is easiest to get the pulse at the wrist. If you use the inferior collar, be sure not to force down too firm, and never force down on the pulse on both sides of the lower neck at the same time to prevent blocking blood flow to the brain. When taking your pulse: Using the first and subsequent fingertips, force down firmly but quietly on the artery until you feel a pulse. Start counting the pulse when the clock was stated. The count should stop for 30 seconds and multiply the required value with 2 for convert it in one minute. A hard training must help to reduce the heart rate below 65 and athlete is needed less rate to perform maximum level.

**Purpose**

To calculate the resting rate per minute

**Equipment**

One chair and stop watch

**Procedure**

The pulse rate of the entire subject could record in resting position in early morning between 5.30 to 6.30am. Before taking the pulse rate, all the subjects kept relaxed position for minimum 15 minutes.
Scoring

The number of pulses was conducted for 15 seconds and then multiplies by four to record for a full minute.

BREATH HOLDING TIME

The maximal duration of voluntary apnea varies from subject to subject and depends on chemical and non-chemical stimuli. Breath-holding time has been shown to be reduced by anything that increases feedback from diaphragm afferents (any tonic diaphragm activity and possibly arterial hypoxia and hypercapnia) or that increases the central respiratory rhythm. Breath-holding test has been tested in some clinical scenarios and has proved to be of clinical utility. This test can serve as screening test, raising suspicion of obstructive ventilator defects, and could be used as pulmonary function parameter like forced expiratory volume in the first second (FEV1) and forced vital capacity (FVC). The aim of the present study was to determine the maximum voluntary breath-holding time in patients with obstructive ventilator defects and in normal subjects and to correlate the breath-holding times with pulmonary function tests.

The practice of the underwater training and the diving to water as a part of the swimming as well as the time enjoyment activity also becoming the path way for develop the quality of the breath control. It may increase the capability of our lungs and lead to increase the capacity of our breath holding time than the normal state. It will provide safety as well as healthy body for the trainee. The training for improve the strength of the diaphragm muscle also lead to the capacity of breath control. The systematic and planned practice of the diaphragm breathing also the part of our cultural yoga and this skill was follows from the ancient period itself. The improvement of the capacity is leading by seconds by second.

Deep breathing allows your body to take in additional oxygen than the normal conception. It will store in our blood cells and it helps to hold our breath for prolonged period of timing. The practice of the exhale skill pushes our tongue up against our teeth and forms a valve for exhale. It helps for controlled release of the air and also try to make a hissing sound while release the air. This skill also supportive practice for improve the capacity of our lungs.
Whenever we hold our breath a pressure may be produced inside our lungs and it was not the result for breath. But it is the tendency to release the stored carbon dioxide from our lungs. If we have the quality to resist the exhale pressure of the CO$_2$ means we can improve the power of breathe holding time.

While practicing the inhale and exhale procedure, we should maintain our body in constant state. It will reduce the expenditure of the stored oxygen in our body. Inhale and exhale practice should do with proper timing along with concentration. The improper expenditure control of the oxygen is one of the best ways to improve the capacity our lungs. It will also lead to reduce the pressure of the CO$_2$ to exhale outside.

As per the science we should practice the systematic inhalation and exhalation for our smooth functioning of the respiration process. Whenever we inhale, do not intake maximum amount of oxygen, it will create tension inside our lungs. There should be need a space for share the out coming CO$_2$. This free space may helps for the process of breathing in smooth way. The process of inhalation as well as the exhalation is directly relating to each other.

Once the 90 seconds is up, exhale briefly to rid our lungs for used air and take three consecutive breathing of inhalation and exhalation full stage. This is the skill of semi-purging. After becoming master in the process go for the next stage of the breath holding technique for two minutes and thirty seconds. And continue the process for the perfection and get master in each stage and improve the capability of the breath holding time as well as the capacity of the lungs. While our practice for holding the breath for a prolonged duration time, we are applying cold water to our face means it will reduces the rhythm of our heart beat and this is the condition of the process of mammalian diving reflex.

In this skill we don't want to put our full head in under water, only splash of the cold water on the face is gives relaxed breathing to us. The method of applying cold cloth on the face is also provides the same reflection for the breath controlling skill. The study suggest that the application of the water should balance the temperature around the $21^0$ C. if we are applying the water bellow than of the these temperature may lead to negative reflection to our body.
Another method for improve the quality of breathing is, filling the lungs with around 80 to 85% of oxygen from the comfortable sitting position. The state was maintained as long as possible. This type of practice resists the unwanted usage of the oxygen and promotes the economic usage of the oxygen for the normal works. The training of the same will automatically improve the quality of breath holding time.

The technique which follows the David Blain for his world record was very popular. He followed the technique of holding the breath for count A to Z and vice versa. After getting the adaptation for each stage he started to repeat the name of each letter in alphabets and the stage of the breath holding time further improved and he was set the world record for the timing of 17 minutes and 4.4 second duration through his proper and planned training.

An air hold in cheeks method is meant for an air reserve, which requires "letting go" of the air in your lungs and switching it with the air in your cheeks. This is known as "circular breathing" and can be very hard to get proper result in this type of skill. So avoiding these kinds of the training from our schedule is one of the best ways for getting our required target.

While our practice we should relax all of our muscles and try to relax compete tension from our body. Don’t be bothering about tightness in any part of the body. The eyes should be closed form and slowly concentrate our mind to toe to head motion with relaxing all unwanted tension in each muscle and tendons. This type of breath holding technique also helpful for control the unwanted usage of the oxygen and lead to economy of usage of the oxygen. While this kind of practice the mind control is one of the important aspect and here we can count the numbers in ascending order from 99 to down or can count by using our fingers also will help to control the mind. So we will reduce the tension of the muscles and body will become free from the disturbances. An important aspect to keep in mind while inhaling after the breath hold is that, slowly exhale and should keep 20% of the air reserve in lungs and slowly start for the inhalation. It will help to come back for normal homeostatic state. This kind of practice should do only one time for each session and don’t do more than two times per session. Can do the same in the evening also. Continues practice of the skill in same session will make damage for lungs as well as the whole body.
There is no specific training for increase the size of the lungs but we can increase the capacity of it through systematic practice. The oxygen storage capacity of lungs only will increase though the practice. Some specific exercises are lead to improve the strength of our lungs and maximize their capacity to hold air.

Some strenuous cardio workouts into weekly routine can do wonders in the capacity of lungs. Aerobic related works of running, skipping and swimming are example for the training. These training all are great forms of cardiovascular exercise which get the blood pumping and the lungs working hard to supply the body with the oxygen it needs according to situation. Water exercise also leads to increase the capacity of the lungs. Water exercises include swimming, water aerobics, underwater weight training etc. are variety form of cardio related exercise. If we are practicing in water means it provides the resistance against us and it is one of the best force for improve our capability. The workouts in the high altitudes are also helpful for improve the quality of oxygen storage as well as its transformation. In high altitude the density of the oxygen contend is very poor and it will lead for increase the capability of lungs. One more technique for improve the capacity of economy of usage of the oxygen is to reduce the body weight. If our body weight is reducing means automatically the amount of oxygen usage in our body reduces and it leads to serve the economy of the oxygen usage. The body weight can reduce through diet control as well as the systematic training pattern.

The magician David Blaine is reported to have lost more than 30 pounds before attempting to beat the world record for breath holding in underwater. The training in proper channel is the best medicine for the maximum output.

The oxygen that we breathe is transferred to our blood and delivered to the various tissues in our body and it was converted to energy. The waste product of the energy process was CO$_2$ and it was carried out through the process of exhalation. When we hold our breath the O$_2$ conversion process also is going on and the energy supplies taking place for the needed areas. Now also the CO$_2$ formation going own in cells and it have tendency to lift out from our body. As a part of the same the pain will be feeling to the respective part of the body.

Human body is a machine and it works according to the situation. Whenever we stop our inhalation process the sympathetic nervous system starts to its active works and lead to contract
the blood vessels throughout our body. It also controls the flow of O₂ in our body as well as the metabolic rate in our body. The production and the supply of the energy system only work according to need.

Regular training and relaxation process is not enough to make new world records. The hard work under the difference circumstances are also the part for the result. Herbert the world record holder of maximum O₂ storing lung capacity man with 14 liters sharing his view about the practice of the skill is like this. He says that we want to inhale maximum and after that some more additional aid should consume and it pressure to lungs as an additional load. So the storage capacity of the lungs will improve gradually.

To induce the dysphonic sensations breath holding is the most powerful method. It gives much information on dysphoea. Berating exercise generally increases the lung volume of air flow, providing more oxygen and removing CO₂ more efficiently. The practically breath holding time depends only factor only the breath pattern of the person. Holding the breath helps to concentrate better. Number of studies of breath holding concluded that breath holding ability depends upon various factors like motivation, practice, fatigue, etc. Reduction of circulatory and respiratory system reduces the breath holding ability. Breath holding time is related with the oxygenation and deoxygenating of the body. Breathing model after the test should be the same as before the test. The breath holding time decrease with increased duration of exercise before the rest. Improvement in breath holding time could be achieved through practice. It may possibly for some individual to hold their breath until they become unconscious.

**Purpose**

The purpose was to measure the ability of the subject to hold the breath for longer time.

**Equipment**

Stop watch, score sheets and a pencil were used to administer this test.

**Procedure**

The subjects stand very relaxed and inhaled deeply after and hold the breath for maximum possible time. The index finger of the respondent served as an indicator to the
Investigator to know the start and end of the recording time. The subjects were requested not to let the air out by opening the mouth while recording the breath holding time.

**VITAL CAPACITY**

The maximum capacity of the lungs is called vital capacity. Aerobic activity is the best method to improve vital capacity and it is very important to perform maximum particularly long distance running. The major factor affecting the vital capacity is the position of the person during the vital capacity measurement. The average Indian adult men have only 3.9 liters and women have only 2.6 liters of vital capacity.

The vital capacity gives an indication of the ability to respond to the additional oxygen requirements of the body during exercise. The capacity of the lungs normally improve through physical exercises and activity, it can be measure by using normally wet spirometer. It varies with the type of work an individual does and the use to which he has put his respiratory apparatus. Athletes, swimmers, divers, etc. have a higher vital capacity, it also increased with practice. Vital capacity is the maximum in the standing position. In sitting and supine postures there is a muscular hindrance to maximum expiration of the lungs.

The vital capacity is the sum of tidal volume, expiratory volume and the aspiratory volume of air. The instrument which can use for measure the vital capacity is wet spirometer. With the help of these data can reach a conclusion about the lung power of an individual. The doctors can easily find out eh complication of the lung capacity from the data itself.

Normal vital capacity of the people may vary according to the height, sex, age, body weight etc. A poor vital capacity is the symptom for the lung disorder. Exercising helps to increase vital capacity because the muscles require additional nutrients when they perform hard works. This will force to lungs for inhale more $O_2$ in tough works. The extra inhalation and the more conception of the $O_2$ lead to increase the capacity of the lungs and it provides overall healthy life to the individual.

The vital capacity is used by doctors do determine how much air the lungs can store a while. The bad habit of the smoking is directly effects the capacity of lung storage. Smoking
is reduces the capacity of the lungs as well as the supportive muscles. The weak condition of the lungs is directly relating to the duration of the habit of smoking.

Performing breathing exercises during everyday activities is one of the best media for improving the capability of the lungs. The variation in the counts of inhalation as well as the exhalation will lead to gradual improvement in lung capacity. The systematic and regular practice is the best medicine for the best result.

Physical workout is one of the solutions for increase the capability of the lung power. It is include the practice of the underwater workout. Exercising in water will add additional resistance to our regimen that will increase the amount of oxygen supply to the blood. The skills which are practicing under the water all are lead to improve the capacity of the lungs as well as the supportive muscles.

Participating in 30 minutes of cardiovascular activity is enough to improve lung function as a limit. The aerobic related activities are best for improve the quality of vital capacity. All the activities which are improves the quality of vital capacity are considered ideal activities to pump more oxygen into the system and improve circulation to throughout our body. The workout like high intensity sprints and the moderate activities are improves the quality of vital capacity. The high altitude training also improves the vital capacity. The higher area has less amount of oxygen content and it makes a resistance for lungs and gradually it leads to develop the condition of the lungs. The aerobic activity athletes are practicing at high altitude is for get this advantage and when they are coming down to the sea level means it is easy to perform well.

Some physical activity equipment gives the correct workout of lungs and it also leading to develop the quality of lung capacity. This training is one of the enjoyable one as well as results positive for the lung volume. Several studies already proved that the artist those who are involving to use the wind instrument have good vital capacity than the normal one. The practice of the instrument gives opportunity to learn how to control their breathing and expand the alveoli to take in the air necessary to make the instrument usage as well as its functioning. The marching band team as well as the school band set also includes the artists of air instrument handlers.
Lungs are the part of respiratory system and the vital capacity is depends on the strength of the lungs. Although it measures the approximate capacity of the lungs recent information indicates it is of little use in predicting the ability to perform tasks of endurance. Obviously other factors are more significant. For example, any limitation of the oxygen delivery system to the cells will reduce the effectiveness of the delivery regardless of vital capacity. Probably a large vital capacity is important in very intense exercise when the lack of oxygen may be found in the alveoli but it is of little value when the exercise is less demanding.

All the physiological function that is happening in the body is because of supernatural power in the body. Contraction and relaxation of the ventricle will cause the pumping of the blood to all the body parts.

**Purpose**

To find out the capacity of lung to hold the air.

**Equipment used**

- Spirometer

**Procedure**

The subject was made to sit in resting position and the mouthpiece of Spirometer was put into the mouth between the lips. The subject was asked to breathe normally. Then the respondent was asked to do a deep breath following by rapid and expiration. At first the researcher is giving a trail for the students and the second time they asked to do the thing correctly. The value is taken and it will record in the book.

**Scoring**

The total time was calculated to hold the breath depends upon his ability.

**BLOOD PRESSURE**
Blood pressure (BP) is defined as the pressure exerted by the blood on the walls of the arteries. There are two types of pressure. One is systolic which the high pressure is and the other one is diastolic pressure which is the lowest pressure. It is the measure of the force that the heart needs to push blood through the body. The resistance of the blood against the artery walls, during systolic myocardial contraction forces a volume of blood into the arteries and during the diastolic the arteries recoil and the pressure drops. Medical studies now show that participation of sports will induce at rest 5 to 25 millimeters of mercury reduction in the systolic blood pressure and 3 to 15 millimeters of mercury reduction for the diastolic one. It can be unhealthy high, but can be also be too low. Without a normal base line, white blood cells-which are part of the immune system by keeping a healthy life style, cutting down the sodium intake practice daily aerobic exercise will keep the blood pressure rate normal in our life.

Blood pressure (BP) is the pressure exerted by circulating blood upon the walls of blood vessels. The instrument using for measure the BP is spigmanometer, the reading is showing systolic blood pressure as well as the diastolic blood pressure. The measuring area of the body part is upper arm. The instrument is showing the result in mm of Hg. The normal blood pressure for an adult is approximately 120/80 mm Hg.

The condition of tension, disease, and all other activities which are regulates the nervous system will affect the rhythm of the BP. The balancing state of the BP fluctuation is also a problem for well balanced life. If the blood pressure is below the normal state means it will be call as hypotension and the BP is high than of the normal state is also a complicated state and called as hypertension. Hypertension is generally more common, also due to the demands of modern lifestyles. Hypertension and hypotension go often undetected because of infrequent monitoring.

The fluctuation of the blood pressure is will not be take place again and again. Once held means we should identify the cause and rectify the situation with the help of eh doctor. The fluctuation is more than of the normal state means will call it as hypertension and the blood pressure is coming down from the normal state means will call it as hypotension. The only way to identify the fluctuation of the blood pressure is regular checking process. There is no short cut for find out eh blood pressure variation in any other way. the instrument where using for measure
the blood pressure is spigmomanometer and it will give the reading of two digits of systolic blood pressure as well as the diastolic blood pressure. The reading is working under the flow of the mercury present in the tube of the machine. The normal reading of the blood pressure is 120 to 80 mm of hg.

The blood pressure reading will write as like 120/80. The reading of the higher value is the representation of the systolic pressure and the reading of the lower value is the diastolic reading. Systolic pressure is the pressure exerting the blood to the walls of the blood vessels while the blood is pumping to the body parts. The amount of blood pumping is more in quantity so the pressure also is more. The diastolic reading means the pressure exerted while the blood pumping for purification system. The heart is pumping the waste blood to the lungs for the process of purification and the amount of blood is less as compare with the systolic blood amount. So the pressure also is small as compare with the systolic pressure.

The fluctuation of the blood pressure leads complication for our healthy life. The low blood pressure has not that much effect as compare with the high pressure. So should try to balance the blood pressure in normal state. Always resist the fluctuation that going to higher level. If the blood pressure is below the normal reading means we can increase it with easy methods, but the higher value of the blood pressure is difficult to bring down as normal state. Higher blood pressure has higher possibility for the complications. An example for the complicated variation of the blood pressure is, 115/75. This reading is in dangerous situation but the fluctuation of 135/85 is not a dangerous one as compare with the first one. The food and health status has important role in fluctuation of the blood pressure.

The pressure of the blood flow is very high in force and the blood vessels should need resistance power for resist the pressure. The weak condition of the blood vessels are leading to make complication in higher blood pressure. High blood pressure is one of the complicated situations in human healthy life. It will lead the complications of heart attack, stroke, coronary heart disease, kidney failure and other health related complicated states.

The latest in Unites States are reached the conclusion that around 1 in 3 of adults in the country was facing the trouble of high blood pressure. It is due to their sedentary life styles as well as the inactivity in daily life. There is no symptoms for identify the blood pressure
complication in advance. So the patients knew the condition only after facing treble. The only way to identification of the blood pressure complication is to check the blood pressure in each day with proper care. Prevention is better than the cure. The lower reading of the BP from the normal state is not that much complicated as compare with the high blood pressure. High blood pressure is the complicated situation for number of health troubles.

Systolic blood pressure is the highest level to which the arterial blood pressure rises during the systolic ejection of blood from the ventricle. And in diastolic pressure the lowest level to which the arterial blood pressure gone into the interval between the successive hearts beat is called diastolic blood pressure. It can be measured with a Bp cuff and stethoscope. Bp is the force of the blood roughly alongside the walls of the artery. Every time the heart beats, it pumps blood into the artery, follow-on in the maximum blood pressure as the heart contract. An individual cannot take the Bp, but if one can monitor the Bp if a possess an electronic Bp monitor machine is used.

We will get two readings while we measure the Bp. The higher number is known as systolic pressure, refers to the pressure within the artery when the heart contract and pumps blood through the body. The lower number is called diastolic pressure, means the pressure in the artery when the heart is at rest. We are not capable to manage some of the factors that amplify the risk of hypertension, over the age of 35, family history of hypertension, or having type II diabetes or kidney disease. Blood pressure is the force of blood against the walls of the arteries as the heart pumps blood all through the body. The factors that affect Bp to change from day to day and during the day.

High blood pressure for adults is 140 mm Hg systolic pressure, 90mmHg diastolic pressure. Normal blood pressure 120 mm Hg systolic pressure and 80 mm Hg diastolic pressure. Hypertension has got a direct a link in the risk of heart attack and brain stroke .With high blood pressure, the arteries may have an increased resistance against the blood flow, becomes the reason for the heart to pump more strenuously for further circulation. A distinct high blood pressure measurement is not necessarily an indication of a problem. A person who normally runs a lower-than-usual blood pressure may be considered hypertensive with lower blood pressure measurements than 140/90.
Blood pressure doesn't stay the same in all situations. While sleeping the BP will be come down and while involving indifferent activity will change the rhythm of the BP. The variation of the blood pressure is directly relating to the nature of the activity. The nervousness also leads to fluctuate the rhythm of the blood pressure. If the blood pressure reading is changes according to each time means the symptom for irregularity. So should to consult a doctor as early as possible. The doctor will prescribe the treatment plan to keep the blood pressure under control. The fluctuation is not directly affects the both systolic and diastolic, some cases the fluctuation is affects either the systolic blood pressure or diastolic. This is also the irregularity of the rhythm of blood pressure. The blood pressure varies according to age and if we are physically as well as physiologically fit in aged condition means the fluctuations are not taking place. That is the power of the fitness state of the human body. The key points for balance the blood pressure is systematic life span and controlled diet.

Cardiovascular system keeps its functioning at hit the highest point efficiency by maintaining homeostasis through proper BP. The blood vessels will either expand or contract depends on the temperature of the body. When the blood vessel contracts the blood pressure increases and the body maintains the same heart rate because of the amount of blood in the heart and blood vassals.

**Purpose of the tests**

To measure the blood pressure (systolic and diastolic pressure)

**Name of the instrument**

Sphygmomanometer

**Procedure**

The measurement was taken with the subject in the supine position. The cuff was wrapped around the arm even with the lower edge with approximately one inch above the anticubital space. The stethoscope was placed on the medical side of the elbow, over the artery and was making sure that it had no contact with the cuff. The pressure off the cuff was then
slowly released as the investigator watched the gauge when the sound of the pulse become audible the reading in mm of Hg at that systolic pressure was recorded.

Scoring

The blood pressure was measured in millimeters of mercury (mm of Hg).

PSYCHOLOGICAL VARIABLES

Psychological and social dimensions are important for sporting activities apart from physical and physiological aspects. The main objective of sports is to develop physical and mental health, further to integrate or to bring about psycho-social co-ordination, socialization and cultural interaction, and thus to develop a spirit of tolerance in order to promote national and international, social and cultural integration and peace. In this modern era of competition, the psychological preparation of an individual is as much important as teaching the different skills of a game along scientific lines.

Competition might result in victory and defeat as well. The main objective of the competition is not only to develop proficiency, but also to develop the spirit of sportsmanship with which they play and perform their best in competition. The sports scientists and other experts related to physical education to give much importance to psychomotor abilities to get the maximum performance from the participants and that is very much appreciated by the sports psychologist.

Sports Psychology is the youngest area of the sports science. And it is become recognized in 1970’s. The study was actually begun in the European countries first time. It becomes the branch of the Psychology. Now it is become one of the major branches of the science and lot of publication and seminar were doing all over the world. In 1985 US Olympic committee posted a sports psychologist to the programme for the mental preparation of the athletes in America.

In psychologists view self confidence as the most central core component of human personality and it has a major influence on our people in sport and exercise. Self-worth or self-esteem is an important need for all individuals and it emanates from feeling competent and in
control of our behavior in an achievement area. Spots Psychology is a young branch of psychology and it has only begun to scratch the surface of understanding the thoughts, feelings, and behaviors related to participation in physical activity. But the knowledge base that developed over the last three decades is impressive as research continues to study personality, motivation, group processes, and intervention techniques related to sport.

Today, sport and exercise psychologists have begun to research and provide information in the ways that psychological well-being and physical activity. In addition, sport psychologists are beginning to consider exercise to be a therapeutic addition to healthy mental adjustment.

Just recently have sport psychologists begun to be recognized for the valuable contributions they make in assisting athletes and their coaches in improving performance during competition. Psychology of the athlete is very important during completion and even before and after the competition. The sports psychologist can improve the confident’s level of the athlete and helps to control the emotions of the athlete even during tight competition. Many sports persons facing a major problem in the sports arena is tension and their parents have all been now aided by psychological guidance. The psychological assessment of athletes has also come into vogue recently.

ANXIETY

Anxiety is an emotion that is difficult to define and even more difficult to reliably detect performance. “Nervousness” is often used synonymously for anxiety. Everyone has nervous at one time or another. It can be experienced at different levels of intensity. Anxiety is directly related to tension. It changes or varies over time. It is commonly referred to as a state, which is the degree of anxiety a person experiences at a given movement.

The real meaning of anxiety describes it is a state consisting of psychological and physical symptoms brought about by a sense of apprehension of a apparent hazard or threat. The state of anxiety will differ according to the situation and according to individual. In terms of sports it means that a golfer for example may experience more anxiety playing in a national tournament compared to local club competitions. As like same a club competition sometimes draw the same nerves in another individual.
There are two types of anxiety, trait and state anxiety. Trait anxiety is relating to the aspect of one’s personality in which nervousness is a stable personality trait in an individual. At the same time the state anxiety on the other hand refers to temporary feelings of anxiety in a particular condition. Sometimes the person with high anxious personality may feel everyday tasks with stressful and nervous conditions due to their imbalanced psychological deformity.

**Causes of Anxiety**

One of the reasons is that the constant evaluation of the spectators about the skills and the value they giving to the respective player may lead to the nervousness to the player. The experienced player will use this situation as positively and they will shine with the support of the spectators as a motivator. And feel their support as a motivation.

The anxiety can also be confused with fear but there is a significant difference between these two emotions. A fear or “phobia” is a negative feeling about a specific object (spiders) or experience however anxiety is more general and often athletes recognize that they are anxious about something but cannot put their finger on it.

**Anxiety and Tackling**

Many athletes’ anxiety can be a very unpleasant feeling with physiological symptoms including a increasing heart rate, sweating the palm and feeling of muscle tension etc. Seven possible categories in which an athlete can experience stress in different situations and he gives solution for manage the same.

Sport psychologists can teach techniques one can use to control anxiety. One technique involves the athlete “labeling” these thoughts and feelings described above as a way of priming them for respective competition. By the course of labeling an athlete can learn to associate those former negative thoughts and feelings with preparing for compete the situation. One of the examples is that a cyclist can learn to his/ her increased heart rate as a positive indication that they are well prepared for competition.

A study about Indian Yoga pointed out that, the participants were able to control various physiological functions voluntarily. The body temperature, blood pressure and the brain waves
are able to control through the systematic practice of the yoga skills. The specialty of the yoga skills is easy to study any one in any age category. It is easy to study as well as teach and share the experience from one generation to another. Numerous studies already proved that, through the practice of the yoga skills can control the mind and its all kinds of fluctuations. Breathing exercise is one of the best medicines to get the control over the mind. The breathing exercise provides relaxation for an athlete who is going for attend the competition. These skills increase the amount of O\textsubscript{2} in the blood as well as the cells. It provides freshness for the competitor. Yoga gives priority for the diaphragm breathing and it can learn through simple way that, to place our left hand on the abdomen and the right on our upper part of the chest. While our breathing the left hand should move out and the right hand should remain in constant state. This is the sign of the proper breathing through diaphragm. This skill will lead to inhale more quantity of air as well as give relaxation to our body. We can practice this skill in free times and it will help to get calm and balanced mind for the athletes and will lead for best performance.

How do you feel as you toe the starting line at a running race or face the jump ball at the league basketball game or wait for the opening serve at your health club in volleyball? This is the situation for check the balanced state of our mind. There is no doubt as like chores our mind also will lead to the fluctuation. It is due to the result of the nervousness about the specific situation. If the competitions may be club wise or standard the nervousness is depends the competitive experience of the participants. If we have more competitive experience means will reduce the nervousness as well as the competitive fear.

Spiel Berger was the first anxiety theorist to distinguish between transitory fluctuations in levels of anxiety and the concept of anxiety as a state personality variable. There have two types of anxiety, first one is the harmless which is being able to identify why or how what he is fearful. Free floating anxiety is another type of anxiety. For the performance of sports, anxiety has a crucial role. The better performance is even related to the anxiety level of the athletes and there is a positive relationship between sports anxiety and performance.

**Anxiety and Sports**

Anxiety is the normal reaction of the stress people. These are the main systems of the anxiety, muscle weakness, tension, chest pain, nausea, tiredness, stomach pain and shortness of
breath. Increased blood flow to the major muscle groups, immune and digestive system functions are inhibited.

There is some difference between the trait and state anxiety. State anxiety considered to be somewhat situational in nature. Trait anxiety is related with human nervous system and it is very uses when coping with situations in his or her environment.

Anxiety is a psychological and physiological state of emotional and behavioral actions. The root meaning of the word 'anxiety’ is to vex or trouble; in either presence or absence of mental stress. It creates feelings of fear, worry, uneasiness, and dread. Emotional maturity includes the ability to deal constructively with reality. It is a process in which personality is continually striving. Anxiety is one of the greatest problems of modern society. The emotional state of mind is arises as a result of fear for something unknown which creates tension and disturbance.

According to psychologists the anxiety is two types and they are state and the trait. Two anxieties have its own role in competitive sports as well the performance. Anxiety is the state between the psychological and the physiological response. The intensity as well as the result of the anxiety differs according to indicial as well as the situations.

Anxiety is one of the most common deterrents to good performance. At worst, the effects of anxiety slyly impair the performance by restraining the individual. That is not to say that you cannot produce superlative performance when nervous. In fact, most athletes experience some anxiety before producing their top performance. By its nature, anxiety tends to interfere with athletic performance. The lowering of anxiety may be caused due to regular participation in games and sports.

It is estimated that many young athletes drop out of organized sports each year due to frustration and fear of failure. Many young athletes thrive; on the pressure and tension associated with competitive sport, for too many find that the experience precipitates the feeling of apprehension and stress. The phenomenon of anxiety and how it affects the athletes experience present numerous strategies designed to intervene and reverse the negative effects of anxiety on the athlete, based on an understanding on the neuron physiology of the nervous system as arousal and the effect of runway anxiety and associated arousal.
The sports anxiety can control through the meditation and the real support of sports psychologist. It has two sides one is positive and the other is negative, the positive anxiety is very helpful to do better performance and the negative anxiety is do negatively for the maximum performance. The low level of anxiety seems to the better sports performance and it must influence the performance of the athlete.

Anxiety plays a vital role in sports and games. Normally, all sportsmen have some level of anxiety. Even coaches have anxiety to a limited level. Whenever the players become more anxious in state the performance also decreases. If it is at a lower level, it will lead to better performance. Therefore the level of anxiety should be minimized. The anxiety of the sportsman during competition can minimize through a good perception and mind control. If anxiety becomes very high, that person loses complete control of himself and the situation.

Sports Competition Anxiety

The following questionnaire containing twenty questions and there are 3 options, one is "Rarely", "Sometimes" or "Often" feel this way when competing in your sport.

SCAT Score Norms

Less than 17 - low level of anxiety
17 to 24 - average level of anxiety
Above 24 score is high level of anxiety

AGGRESSION

Aggression is overt, often harmful, social interaction of a particular individual with the intention of inflicting unpleasantness to the other person. It is the behavior between the two individuals that some time causes harm or pain. It is defined as any interpersonal behavior intended to cause physical harm or mental in sports is called aggression in sports can be caused by a number of factors fluctuation instinct, environmental causes. It may happen because of the provocation of the other individual that is also in that particular group.

Aggressive behavior is behavior that causes physical or emotional toughness to others. Normally its range were extends from the verbal abuse dialogs to destruction of the others properties. It is an internal character and the results were doing with conscious mind. This
character may lead to breaks the relations in between the players. Emotional imbalance is one of the basic causes for the aggressive behavior.

The root of the aggressive behavior is relating to the role of spectator in the competition arena, the events were the athlete is taking part etc. all are the positive aspects of the aggression and it will change according to individual as well as the situation. The nature of the aggressive behavior changes according to specific conditions. Sometimes it may end with some abuse words and sometimes may lead to harmful strains. The material destroying as well as the attaching tendencies is the final stage result of the aggression. These behavioral changes are controlled by systematic psychological treatment as well as the psychotherapy. The nature of the hostile aggression is to attack or behave harm to someone in the playing area. The uncontrolled behavior leads to get the punishment for the respective player. The punishment intensity will depend the harm of the situation as well the nature of the behavior. An example in the game situation is that, a player is attacking the opponent by tripping the sole of the boot to against player and lead to make an injury is an intentional attack of the player and it is a punishable offence. It will come under instrumental aggression. If it is in the same team members in the practice session’s means the aim of the player will changes. Such cases the attack will be taking place to make the injury to team mate and get a chance to play instead of the injured players. The mental attitude is the result of the situation of aggression. Many research were already proved the situations as like this and they were categorized the situation as in harm category.

The research of the aggression about the player were says that the aggressive behavior lead to violence in game as well as the smoothness of the performance. The aggressive behavior is one of the positive qualities for an athlete as a balanced level. But whenever it becomes uncontrolled means the result is opposite. The aggressive behavior lead to change the body temperature and it will lead to lose the mental control and the result may negative. In basketball and baseball the attention of the player is essential part for the best result. The aggressive behavior leads to opposite result for the team.

In the game of basketball the two teams have good margin score in match means there is possibility fro create the behavior of aggression in both side. The losing team will become the aggressive state due to their margin of score and the opponent will lead to become aggressive due to the irritations of the losers. The aggressive situation is complicated in equal balanced
teams and the score is going to equal in margin. Both teams will become under pressure and lead the tendency of aggressive play. A well balanced state of mind is needed to get proper control over the situation. Another specialty of the situation is that the losing team will face the fluctuated aggressive situation according to the game score as well as the time duration of the game for conclusion. But the leading team will have a balanced state of aggression due to their leading of the match as well as the confident about the match. Well balanced and competitive aggression is necessary for better result.

The nature of the spectators, heat, disturbed state of play due to the opponents, usage of the alcohol or other prohibited drugs are leading the player to aggressive as well the violated situations in the competitive situation.

The psychological study result of the last 15 year was reached the conclusion that, the team identification is one of the media for leading the aggression in player as well as the spectators. While math begin itself the spectators were expecting the specific result from their respective players as well as the teams. If the fluctuation from the expected result will lead to aggressive situation and also it will spread to the field of play. In tough matches the support of the audience as well as the nature of their behavior affects the game situations and the players lead to change their neutral game. They were unintentionally leaving to aggressive situations. Fans and their expectations are all make huge role in aggressive situations. An experienced and well balanced player will not affect the change character of audience to his result. They will not bother about the support as well as the resistance. They can concentrate only to their own game and they will perform their own better performance in each and every game.

There are three types of aggression affects the results of the players are, instrumental aggression, hostile aggression and fan rioting. The explanation of each one is like this, the aggression of instrumental means the attacking tendency of opponents, coaches, audience and some time the same team members etc. it is due to tossing of the self control over the situation. Hostile aggression means the aggressive situations were created due to home city play or the game. The nature of the fan rioting aggression is that, the teams have fans according to their performance. In tight match of the two important teams will lead to make violations in the gallery and its intensity will reach to the ground and eh players also gradually leads to aggressive match. Psychological balance have major role in successful result.
Some studies positively find out the result that the presence of the family members in the gallery creating vibration in players and they leads for aggressive situations due to imbalanced mind state. The player has not enough experience means the situation results negative performance.

The players were coming after facing different situations in different levels of competitions. They will be faces different pressure situations in their competitive area, playing field, selecting area etc. It is not easy task to balance the different pressures in competitive field. This imbalance situation of the player gradually leads to aggressive situation. The identification of the basic character of the aggression in right time and the remedial treatment from the part of the coach will hinder the negative quality of aggression as a limit.

Situational stress is one of the influenced factors for the aggressive nature. The stress from the side of team mates, audience and the opponents all are leading to change the balanced state of the player. The aggressive situation or the character is gradually leads to violation behavior in players. This is one of the high level imbalanced state of the mind and the athletes or the players were totally leaves from their normal state of condition and performs the violated characters against the opponents or the referee or towards the coaches. It is one of the dangerous situations in the competitive field.

The nature of the aggressive behavior is two types and if the players getting relaxation after making abuse dialogs to opponents mans the behavior can control easily. But the attitude of the player is leading to destroy the materials of others means it is some more complicated state and it is not easy to control. This case will provide further complication in his carrier as well as the relations.

What Causes Aggressive Behaviour?
Factors which are influences the aggressive behaviors are,

1. Family structure
2. Relationships with others
3. Work or school environment
4. Societal or socioeconomic factors
Children and the character of aggression

Aggression in children is often a byproduct of parent’s lack of proper care to their children. The children were developing their basic characters from their peers as well as the influence of the media. Home is the first school for each child to get proper correction from their parents. The lack of attention of the parents is leading to promote the bad characters in their children. This character will reach its top form in later. Right direction in the right time is the prime duty of each parents and it will mould well balanced life pattern as well as the character to their children.

Aggression and the Adults

The adult aggression is develops due to their negative life experience or the mental illness. The adults are always suffers the mental illness due to their works, money problems and the family matters etc. Well balanced life span gives appropriate mental balance for adults and if the imbalanced family situations are fires the mental illness of the adults. Mental torturing is one another factor for improving the quality of aggressiveness in adults. The aggressive behavior in adults will results the complications in their life. If the aggressive behavior is beyond the control of the adult’s means will create double trouble to their balanced life.

How Is Aggressive Behaviour Treated?

The most common way to treat or reduce aggressive behavior is psychotherapy under the supervision of the instructors. It will result the well balanced state of mental peace and psychic balance. In sport, aggression is a characteristic that can have many negative as well as positive effects on performance. Aggression is the “any form of behavior directed toward the goal of harming of injuring another lived being who is motivated to avoid such treatment”.

The aggression is develops from the common arguments and the arguments are gradually leads to complicated state of the harmful aggression. A coach or sports psychologist should
know the behavior of the athlete and must control the aggressive behavior, and then only one athlete can perform the maximum level. The player’s behavior according to situation will decide the stability of the aggression. The situation of frustration also leads for aggression.

Aggression is the defensive behavior of human being. In the same sense the aggression can take a variety of forms and can be physical or mental. Aggression commonly called assertiveness although the terms are often used interchangeably among lay people. Aggressive nature may develop from the human frustration and other emotional problems. In sports aggression plays a vital role. Aggressive players are used in football. In sports aggressive act can be defined as those in which the athlete is highly motivated to produce a great energy release or not inhibited by fear or potential failure of energy.

Aggression has a positive influence on the performance outcome of an individual or team if the aggressive behavior harmed the opposition either physically or psychologically either by weakening their resources Human beings is capable of a wide range of behaviors. Aggressive behavior is quite visible in sport. On the one hand, they may show comparison and help others, while on the other; they may seek to harass others, through aggressive actions. Of course, not all aggressive behavior in sport is violent and destructive. In fact, many forms of aggressive behavior are accepted and even promoted. Often aggression is "part of the game “Aggression is a behavioral aspect, and not an attitude, emotion or motive; also, aggression is directed or intentional behavior.

The word Aggression comes from the Latin root aggredi (to attack) and gradi (to go toward). The literal meaning is to move against or to move with intended. Research into the relationship between aggression and sport has taken three mail1 routes. Some researchers have approached aggression in sport as catharsis that allows for the release of aggressive impulses and reduces aggressive behavior in non-sport settings. Other investigators have examined the antecedents and consequences of aggression in sport, while still others have focused on the effects of aggressive behavior on sport performance. The following review highlights the major findings of these three approaches.

**Sports Aggression**

Sports aggression inventory questionnaire was selected for this study. The questionnaire was distributed to the subject after the discussion. The direction was read by the researcher. The
inventory consists of twenty five question in which 13 items were keyed as ‘yes’ and 12 items were keyed as ‘no’, the statement which is keyed ‘yes’ are 1,4,5,6,9,12,14,16,18,21,22,24 and 25 and the statement which is keyed as; no’ are 2,3,7,8,10,11,13,15,17,19,20,23.

Scoring

For each correct item score was one so the maximum score was 25 and the minimum score will be 0 obtained from all subject. The score was calculated and added to get the total score.

ACHIEVEMENT MOTIVATION

Motivation in education is calculating the interest of the students in that particular subject. Achievement motivation put forward by Clelland, is a factor that relates to one’s aptitude for success. According to the term motivation has derived from ‘mover’ means to move. It is regulated and directing the pattern of activity thrall behavior adapted will involve activity which is directed towards the attainment of some standard excellence. So it is said that achievement motivation is an expectancy of finding satisfaction in mastering challenging and difficult performance. McClelland defined achievement motivation may be associated with a variety of goals. The interaction of an individual with his environment provides constant sources of modification of his old motives and acquisition of new ones.

Achievement motivation in sports looks at how athletes need to constantly challenge themselves and how they thrive on accomplishing their goals and conquering results in different situations. Those who are achieved maximum medals will give the feedback for the role of achievement motivation. The experience as well as the positive results are changes the status and the goals of the players. They will motivate through their achievements and they are enjoying their own positive growth. The quality as well the result will provide the fans for each players and the strength of the fans also motivating the paler for their better result.

Competitiveness and Achievement

Many athletes are achieving maximum through their systematic training as well as the hard works. They also enjoy their medal hunting due to self achievement motivation. The concept of excellence is indirectly related to the competence. Competitive mentality is a form of achievement motivation behavior in the competitive sports. It has its own nature according to
individual and institution. Achievement motivation and competitiveness are interred relating to each other. The achievement motivation is very much influence to the behavior of the competent.

Achieving success is our ability to take pride or satisfaction from our best performance as well as the achievements. The situation in which the opponents are leaving the competition and the authority announcing we are the champions. Here also the player enjoys his result as a part of his achievement motivation.

Many studies already proved that the high achievers have higher motivation to achieve success whereas low achievers have a tendency to concentrate on avoiding failures and that there are a balance between the two distinct behaviors.

The success is depending up on many things, situations and the nature of work influenced to the success. At the same time the low achiever losses such a scenario as one that promotes a feeling of personal shame from a loss. An athlete's behavioral and resultant tendencies derive from considering an individuals motive levels in relation to the situational factors that they faces. Those who are getting more medals, challenges next level which are within their abilities on a competitive level around 50/50 probability. These resultant tendencies for a low achiever will lead to them adopting easier tasks which do not force them to challenge themselves in a sporting context or inexplicably hard tasks where failure is approximately a faith.

The factor in need achievement is an individual's emotional reactions regarding the accomplishment or failure in the competition. The reality is that our personality is the fighter for the situation of failure. In any context that involves some standard against which performance can be measured any situation that offers the opportunity to succeed or fail.

**Sports Achievement Motivation Test (SAMT)**

In the SAMT questionnaire there are twenty test items. Among them, the question numbers of 1, 3, 4, 9, 10, 11, 12, 13, 15, 16, 17 and 20, the expected answer is 'a'. The answer of ‘b’ is for the remaining questions like 2, 5, 6, 7, 8, 14, 18 and 19. Each correct statement awarded 2 marks and for each incorrect answer the mark was awarded as zero.

Scoring: The total achieved marks are the scores.

**EMOTIONAL MATURITY**
Emotional maturity can be understood in terms of the ability of self control which in turn as a result of thinking and learning. The emotionally matured person can control their emotions at any situations. Life today is full of stress, interpersonal stress and professional stress, the place of the life is getting faster and faster every day so the emotional maturity is one of the important aspects of human personality to get rid of negative emotion life hatred anger and to develop the positive emotion of love, compassion and understanding. It may not be a part of the curriculum. But it is the part of the educational process and also part of growing maturity.

It is actually a process of readjustment the infant learns under parental supervision it. It is that characteristic of emotional behavior that is generally attained by an adult after the expiry of his adolescence period. After attaining emotional maturity, it is able to demonstrate a well balanced emotional behavior in his day to day life. Emotional intelligence makes an important part of life. Such intelligence can help one to assess the emotional maturity and emotional freedom.

The psychology of sports is the ability to act or react in circumstances with intelligence and judgment of wisdom. Emotional maturity is needed for all the participants at any circumstances. Emotional health is an important area of human life, particularly the field of sports it control the emotions of an athlete when participating competitive sports. It is the most important ability to express the feelings in deepest way at most appropriate time.

Emotional maturity contributes to the total result of fulfillment of a person’s fulfillment of his intellectual, emotional and social needs. An emotionally matured person can control the feelings at any condition even when facing a critical situation. Emotional maturity is a requirement of maintaining and starting the relationship of two persons. Emotional maturity includes cooperation, humor, quick conflict, family contact space for privacy, stabilizing and energizing qualities.

Emotions are present in all aspects of human life, including sport and exercise. In fact, emotions represent an important aspect of one’s involvement in sport and are a critical factor in both enhancing and impairing individual as well as team performances. The level intensity of one emotion is directly combined with some other intensity of another emotion, the possible
emotions can run into hundreds. Emotions are personal experiences that arise from a complex interplay among physiological, psychological and the situational variables.

Neurobiological theories said that emotions are thought to be related to certain activities in brain areas that direct our attention and the significance of what is going on around us. An emotional experience has “valence,” meaning that the emotion has a positive or negative quality and they often motivate people towards action. Emotional experience is a central part of sport. Understanding emotional behavior and learning how to control and appropriately express emotions in various sporting cultures are challenging but critical tasks for adolescents. Emotional control can help to use maximum potential of the sports man and it can use particularly in the age of adolescents. Emotional experiences are entwined in many, if not all, facets of the sporting experience. Each one develops an inconsistent emotional pattern.

Maturity is defined as the "wisdom or prudence with which man is governed. Maturity is patience. It is the willingness to pass up immediate pleasure in favor of the long-term gain. Most theories of personality define maturity in individual terms mature people have high self-esteem, high emotional stability, high achievement motivation, are self-actualized, are at peace with themselves and so on. These individualistic definitions ignore a person’s impact on our responsibility to others. A sign of maturity, therefore, is the degree to an individual is integrated into his or her society without at the same time losing a sense of whom he or she is vis a vis others. With overall self-approval, a mature person will listen carefully to negative feedback from others, including team mate, coach, audience, peers, spouses, children, students, and employees especially others with less status than oneself. Adolescents with high emotional maturity have shown significantly higher stress and higher self confidence than those with lower emotional maturity. Adolescents with high emotional maturity have better ability to manage, direct and control themselves in each and every action thus resulting in their high self confidence.

When adversity threatens to paralyze anyone, he needs to reassert control by finding a new direction in which to invest psychic activity. Emotional maturity is an essential condition for the development of every individual.

Emotional maturity is the understanding and acceptance of all of one’s normal feelings and emotions and the appropriate response to those emotions in all circumstances. One’s
behavioral response to any situation is a product of one’s mental script. Emotional maturity gives positive and effective outcomes. Which interfere with rewriting our mental script and heightening our degree of EM have been identified as: trash cans, bricks, negative self-validation behaviors, and negative habit patterns? Trash cans and bricks refer to the baggage we carry with us from past experiences and the emotions interfere with the ability to acquire and utilize new information.

Emotional stability helps us not to set ourselves up for disappointment, but is living in the present and appreciate what we have. Emotional maturity means, in essence, controlling one’s emotions rather than allowing emotions to control one by becoming aware of the negative and inaccurate beliefs and ideas.

Maturity is the art of living in peace that cannot change and the wisdom to know the difference. Adolescents with high emotional maturity have shown significantly higher stress and higher self-confidence than those with lower emotional maturity. Barak Obama of America recently won his second presidential election and the chief reason for it might be his emotional maturity. ..

Emotional maturity plays a vital role in a healthy person and his attitude towards life and towards himself as long as he lives. Thus the major aim of an excellent sports programme is to help learners gain adequate emotional maturity. It includes factors like the ability to deal constructively with reality; the capacity to adapt to change; a relative freedom from symptoms that are produced by tensions and anxieties.

**The Emotional Maturity Questionnaire**

Please rate each item as outlined below according to your life experience.

Scoring: To each item carrying the marks are, "1" scores for each answer of ‘Rarely’, the answer ‘some times’ awarded the score of "0.5", and the answer for ‘Often’ was awarded as “0” scores. And the norm was followed for the study was,

1. Greater than 30 is a sign of good emotional maturity.

2. Between 10 and 30 a sign that you will likely have some challenges ahead in your life if you fail to address the relevant issues.
3. Less than 10 is a sign that you are going to run into significant trouble if you haven't already.