CHAPTER III

MATERIALS AND METHOD

The present study was carried out with the purpose to examine the psychological characteristics among basketball and volleyball players in terms of mental health, emotional intelligence and personality. The methodology followed to conduct this scientific experiment has been presented in this chapter.

3.1 Research Design

The present research study goes through a method of survey research, which involves systematic compilation, explanation, analysis, and reporting of relevant facts concerning an enterprise, an institution(s) and a population and / or some aspects thereof. The basic rationale of a survey study is to establish present practices, conditions or the effectiveness of the enterprise in order to provide guidance in the justification of development of present status. Survey studies portray and infer that “exists” and how researcher could deduce things in order to suggest change alteration or improvement in the existing practices. A survey is essentially concerned with prevalent conditions, or relationships. Comparison is another underlying objective behind these status studies. Descriptive survey may also be called an assessment study, which aims to describe the status of a phenomenon at a particular point of time. No value judgment is given on the prevailing situations under description. This technique, in fact, has been adopted in this study.
3.2 Methods

The Subjects

For this survey study, the male players of Basketball and Volleyball from all the districts of Maharashtra attending the selection process for state level competition were considered as sample. In fact, total population was covered for this study. Total four hundred (n=400) elite male players of Basketball and Volleyball were participated. Out of 400 subjects, age ranged from 18 to 25 years, 200 were Basketball players and 200 were Volleyball players.

Methods of Survey

Psychological characteristics of all the state level male players of Basketball and Volleyball were assessed for mental health, emotional intelligence and personality profiles. Before such assessment, the researcher approached to the head quarter of the particular sports association of each district of the state for availing permission to collect data. Further, he has taken written consent from all the subjects prior to testing procedure.

It was not possible for him to collect the variety of data (mental health emotional intelligence and personality) on such a large sample. He, therefore, formed a team of helpers consisting of 14 persons having background of research. The helpers were given proper training and tested repeatedly their ability to collect data on each variable. After evaluating the helpers’ proficiency i.e., on consistency for data collection on small sample, they accompanied the present researcher to collect data on the large sample.

The researcher arranged all the necessary things and test-materials well in advance. The data were then collected systematically and preserved for data analysis. The psychological questionnaires viz., mental health,
emotional intelligence and personality were administered in a class room situation.

Major three variables surveyed among the state level players of Basketball and Volleyball, were mental health (Agashe and Helede, 1998), Emotional intelligence (Hyde, Anukool., Lethe, Sanjyot., and Dhar, Upinder 2001) and personality (Cattle, 1965).

3.3 Tools used & Criterion Measures

Mental Health

There were 36 questions in the questionnaire which was developed and standardized for the Indian students by C.D. Agashe and R.D. Helede in 1998. Overall 36 questions are distributed in three major factors viz., ES (Ego strength), PL (Philosophy of human nature) and SA (Self acceptance). This questionnaire has sufficient level of reliability (r=0.75) and it bears accepted level of content validity.

Personality

For study of personality profiles 16 PF questionnaire made by Cattle (1965), which has been adapted in India by (IPAT i.e., Indian Psychological Association Test) was used. It consists of 187 questions and each question has four options and players have to read it and tick-mark according to first thing came in their mind. This questionnaire has sufficient level of reliability (r=0.70) and it bears accepted level of content validity.

Emotional intelligence scale

This scale was developed by Anukool Kyde, Sanjayet Lethe and Upinder Dhar (2001), who assess the emotional intelligence of physical education teachers. The total numbers of items in this scale were 34.
**Development of the scale**

After consulting relevant literature, 106 items were developed. Each item was transferred on a card. A panel of 50 judges with P.G degree and more than 10 years of experience in their relevant field was prepared. Definition of emotional intelligence was also written on a card along with necessary instructions for the selection of the items on the cards. The cards were placed before each judge who was contacted individually. The choice for categorization of each card was noted and the frequency of choice was calculated.

The items which were chosen 75% or more times were spotted out. The 34 items thus chosen were administered on 200 executives. The data was then tabulated and item-total correlations were calculated. Items having correlation less than the value of 0.25 (p<0.01) were dropped. The value is taken from Fisher and Yates (1992) table of correlation coefficients and their levels of significance. The final form of the scale constituted 34 items.

The Hindi version of the final items was prepared in consultation with 10 judges who were well versed in English and Hindi. The inter-item correlations of the final items were also determined.

**Reliability**

The reliability of the scale was determined by calculating reliability coefficient on a sample of 200 subjects. The split-half reliability coefficient was found to be 0.88.

**Validity**

Beside face validity, as all items were related to the variable under focus, the scale has high content validity. To find out the validity from the
coefficient of reliability, the reliability index was calculated which indicated high validity on account of being 0.93.

**Scoring**

The final version consists of items where a respondent has to make his/her agreement with each item on a 5 point likert scale. All these items are given a score from 5 to 1 i.e. strongly agree to strongly disagree. The sum of these values gives the emotional intelligence scores for the subject.

**Norms of the scale**

Norms of the scale are available on a sample of 200 subjects. These norms can be regarded as reference points for interpreting the emotional intelligence scores. Individuals with high scores can be considered to have high level of emotional intelligence and are likely to be high performers.

**3.4 Statistical Analysis**

Descriptive statistics was applied to process the data. Further, percentage-wise analysis was done and then Chi-square test was employed if the scores in psychological status differ among the state level Basketball and Volleyball male players.

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As we have seen, all mental activities involve the neuro-muscular system. The sense organs, the brain, the spiral cord, and the muscles are all very active whether the mental activity knows, feeling or doing. This is no way we can neither accept the old notice that psychology deals with the mind or the mental activities; nor can we accept the position of psychologists like Watson who assert that the scope of psychology should be limited only to emotion. Often emotion cannot be understood without knowledge of the experience, which influenced the action. Our desires and our thoughts influence our activities. While psychology in its quest for general principles must observe and measures external emotion, it must also get information from the grown up human beings by asking them to describe verbally their own experience.

In a broad way we may state that psychology deals with two aspects of the problems of emotion. There is on the one hand the interest in the general laws of human emotion and experience; the aim of psychology is to formulate general laws which hold good of all human beings irrespective of their sex, race etc. On the other hand it aims at the study of individual differences. While all human beings are capable of learning, it is a familiar fact that some learn faster and take less time and some take longer time to learn the same activity, poem or song. This is due to differences in memory, intelligence etc. There are also differences regarding personality, leadership, and so on. Some of these differences are tied with age. There are differences between the activities of children, adolescents, adults and old people. It is the aid of development psychology to study these differences between the various stages in the growth of human beings. Differential psychology studies the differences between individuals. When we study them we find that these differences themselves obey certain general laws. Thus, the aim of psychology is to study the individual differences as well as the general principles of emotion.

We have studied different aspects of man: man the perceiver, man the needful, and man the adaptive. But it has always been clear that this tripartite
division is merely one of convenience – for analytic purposes – and that man, functioning in his social and physical world is an indivisible unity who perceives and desires and learns simultaneously. We now turn to the task of synthesis – to – the task of describing the whole man.

One of the first things to become apparent as we turn our attention to the whole man is that he manifests himself in infinite variety. There has never been a person exactly like you, and there never will be. And one of the major factors which distinguish you from your neighbour is the way your perceptual, motivational, and learning processes are organized into unique patterns of capacities: intelligence, abilities, talents, and aptitudes. It is this patterning and synthesis which helps makes you, you; which make you Jim McGraw, or Shirley Cohen, or Tony Morales instead of Mr. any man.

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Increasing number of research studies have used 16 P.F. (Cattell, 1965) method of assessing personality. This has had the advantage of making some comparisons between the findings of different investigators though reviewers still find a great deal of difficulty in coming to clear cut and generalized conclusions from the evidence now available. Interpretation is made difficult by the variety of systems used for selecting and classifying subjects, by the different analytical methods employed and essentially by the
absence of either formulated hypotheses or theoretical frameworks. Nevertheless, a number of detailed reviews of the empiric research are available (Cofer and Johnson, 1960; Warburton and Kane, 1967; Ogilvie, 1968; and Husman, 1969) and from these a number of testable hypotheses may be assembled for further rigorous research. These reviews tend to give a personality description of the male athlete or physically gifted individual in terms of extravert tendencies (such as high dominance, social aggression, leadership, tough mindedness) and general emotional control reflected in such trait measurements as low anxiety and high confidence. Women athletes are most often described as being like the men athletes on the extraversion dimension but being unlike them in showing a lower level of emotional control. There are, of course, many exceptions to these general descriptions which have been reported and no doubt both the nature of the physical activity or sport in question and the subjects level of participation will in some way be reflected in characteristic ways of behaving. When the activity and level of participation are held constant interesting consistencies in personality have been demonstrated and evidence presented in support of the existence of certain sports types for example, a soccer type (Kane, 1966), or racing driver type (Ogilvie, 1968) and a wrestlers type (Kroll, 1967). In the search for possible sports types and more generally, in the comparison of personality group profiles, the use of discriminant function analysis has become fashionable. Many studies have relied for interpretation on a simple comparison of the personality measures set out in profile form. The Cattell 16 P.F. may, for example, be conveniently set out in profile fashion showing the norm scores on the sixteen dimensions and a profile similarity coefficient may be used to assess the level of agreement between group profile pattern. However, the simple comparison of profile dimensions taken one at a time has the disadvantage that the profile as a whole is never considered nor is the relative importance of dimensions emphasized.

Indian and Western Concepts of Personality
The word personality was first used by Cicero (106-43B.C.) to mean as one appears to others and also, the part played by one in one’s life. The root of personality is persona, a Greek word, which means a mask one wears in a drama or a role one plays in a drama or in social situations. Other derivatives of persona are: to personate i.e. to pretend to be, personable i.e. pleasing and good looking etc. The concept of personality has developed through years from persona effect to the one’s adjustment with a given environment and finally has led to the definition which is comprehensive enough: most characteristic integration of an individual’s physical structure, modes of behavior, interests, attitudes, capacities and aptitudes.

Indian concept of personality is amply indicated by the term vyaktitva that has Anj as root and tin as suffix. Anj means to bring out or to make explicit. It connotes that there is something which can be made explicit viz. sukshma sarira or subtle body. This suksma sarira has two main aspects, knowledge and activity. Thus, we see that the concept of vyaktitva has deeper areas to touch. Dr. Indrasen of Pondicherry has said, Indian concept of personality analyses its normal make up, discovering and devising the conditions of its growth and delineating the quality and character of its highest status. In simple words, it speaks about what man is, what he can become and how he can become that. If we compare both the definitions we find that the Western concept is silent about the origin of personality while Indian concept indicates suksma sarira (subtle body) as the very basis of one's personality. As well, the Western concept does not indicate developmental aspect, sufficiently, while the Indian one does.

**Development of the Concept of Personality**

Individuality or uniqueness of a person was given greater attention in the beginning which culminated into the development of (1) Idiographic approach whereby each individual is considered a unique entity by virtue of his unique heredity and environment. Then the psychologists thought of
similarities in different individuals. This approach came to be known as (2) Nomothetic approach. Even today, for clinical purposes, idiographic approach is indispensable while for psychosometric purposes Nomothetic approach is used. Then psychologists tried to accommodate both the approaches. Thus, the trait approach was born. Introversion, extroversion, gregariousness, neuroticism etc. are commonly known traits today. Eysenck advocated three traits viz. Introversion, Extroversion and Neuroticism. Guilford’s test of temperament has trait list that includes activity, restraint, ascendency, sociability, emotional stability, objectivity, friendliness, thoughtfulness, personal relations and masculinity. Traits can number as many as 4000 plus and also as less as only two viz. extraversion and introversion. Statistical methods were used by Cattel to narrow down the trait number. Main points of criticism labeled against trait approach are (1) a particular trait can be perceived differently by different persons (2) In critical incidents the person may not show his fixed trait, often exhibited by him in normal circumstances. The ancient Greeks used four types viz. Sanguine, Phlegmatic, Melancholic and Choeric, based on body humors. Kreshmer’s classification includes (1) asthenic (2) athletic (3) pyknic (4) dysplastic. Sheldon used endomorphic, mesomorphic and ectomorphic body types to correlate temperament of individuals. Friedman’s type approach has received a wider acceptance, wherein Type A and Type B personality are all important types. Recently, Type C has been added into it.

Main lines of criticism of Type approach: (1) cause and effect relationship cannot be formed, as has been evident through various research findings. (2) Types are like pigeon holes, fixed and rigid.

The physical fitness as refer to new dynamic and physiological state of individual and continuum from the optimal human performance to server and death of people. The players would be found towards the above and the
continuum fluctuating up and down and depending on their state training whilst at the other conditions of lines could exist while this term may be satisfactory in descriptive sense, problems arise when we try to measure to develop the complexity arises because the physical fitness is made up of series components. If we sow the example like… speed, agility, strength, endurance, flexibility & co-ordination each one of which makes some independent contribution to the whole state while some of these components & very little of anther.

HEALTH RELATED PHYSICAL FITNESS

Those aspects of physical and psychological makeup that afford and individual some protection against coronary heart disease, problems associated with being overweight muscle and joint ligament and the physiological complications of responding to stress.

This aspect of physical fitness is concerns the development of qualities which is necessary to function efficiently and maintain the human life is a healthy life style. If we sow the components of the health related physical fitness are cardio-reparatory endurance and muscular strength & the endurance, and body composition.

COMPONENTS OF HEALTH RELATED PHYSICAL FITNESS

Health-related fitness requires desirable levels of cardio-vascular fitness, percentage body fat, flexibility and endurance. These help to prevent the incidence and severity of degenerative types of disease and increase work efficiency. The cardio vascular fitness refers to the efficiency of lungs and heart. Muscular strength and endurance is the capacity of the muscles to work against the resistance for longer time. Flexibility is the ability to move a joint freely through its complete range of movement. Percentage of body fat refers to the proportion of an individual's total body fat. Modern physical
education sees these skills more as a means to an end than as absolute or continuing in themselves.

As a matter of fact there are very few movements performed, or skills developed, which are persisted in merely for their own value, even in infancy and childhood. As soon as a goal is desired the movement or skill needed to attain it is practiced. The child who wants the cookie learns to walk over and get it. A child learns to ride a bicycle not just in order to ride the bicycle but to preserve status with the gang, go to school, or show off. Physical training is an older but still used term to describe the training of the physical components of the body without any necessary reference to the purposes which are significant in modern education. It should not be confused with physical education. They are not synonymous, as we shall see in the chapters which follow.

Nor should the term physical education be allowed to imply a separation from the mental and thus perpetuate the unfortunate but traditional notion that man exists as mind and body, and that education is concerned with only one, or at the most two, of these parts. The concept of man as a unified being makes confusion on this score unnecessary. The physical education is most importance part of the score in human life. The natural movement of active plays or influence of everyone who are working in the field of physical education.

It has been said frequently that people in the United States are among the most sports-loving in the world. Each year millions play and other millions watch. It is common for a person to be a spectator at a contest one day and a participant the next. He may watch a baseball game, play golf, take in a tennis match, or fish, all on the same week end. There is no great class of spectators and another of participants. Many millions are skilled at both and gain from both certain elemental satisfactions.

How wide is the participation? Such things are not easy to appraise accurately, but it is probably safe to say that if there are forty million children
less than 12 years of age, forty million of them at one time or another play tag or two o’cat or hide-and-seek. They develop their own version of baseball on city streets and call it stick ball. Or they play marbles under the elms in the village square. Hundreds of thousands of them annually put on their first roller skates or master the technique of the bicycle. And some are fortunate enough to learn to ski or ice-skate. More than half of them develop a love for swimming in pools and lakes and rivers. Over the years, there has developed a very real conviction that childhood is a time for play and that our children must have a full measure of it if life is to be judged good. Time enough later on, we say, for the serious business of making a living or establishing a home. Play now while you are young and can enjoy it to the fullest!

In American there are roughly fourteen million men and women who fish for sport each year, and thousands more who do it for a living. These fishermen spend a billion dollars a year on their equipment. There are millions of licensed hunters and millions more who shoot for fun at targets. Golf attracts six million people every year, and howling is the favorite sport of perhaps even more. The six billion dollars or more invested in motorboats in the inland and slat waters of the country, when added to the amount spent by those who canoe or sail, brings boating into focus as one of the most popular sports on the American scene. More than seventy million people pay to attend baseball contests each year. They come to see hundreds of thousands of players. Roughly sixty million people watch football each season; the players in action range from little fellows barely able to see from under their oversized helmets to great professionals stars who play the game for money. Dancing in one or more of its various forms attracts vast numbers. Whether in the round dance of the ballroom or the square dance of the ballroom or the square dance of the husking bee or carnival young and old find in dance the answer to their need for self-expression and for fun. The dancing classes of the country are filled with children learning not merely the steps but also the social skills that go with the particular forms of dance most frequently used in our society. Summer find hundreds of thousands bound for the beach, the mountain lakes, and the neighborhood swimming pools. Swimming, diving,
surfboarding, scuba diving, water-skiing, and boating have their devotees; the water seems to challenge the skills of people of all ages. These activities offer emancipation from the restrictions on movement which our society imposes through the highly conventional life we are supposed to lead. People fret under such restrictions and, when the opportunity is at hand or can be created, revert to the natural state of willing participation in play.

ABOUT ANTHROPOMETRIC

The study of human physical measurements by anther science anthropometry. Which was wide application as one of the essential parameters constituting the selecting diagnostics of any game or sports.

The study of body type has significant place in the field of sports.

The physical structure especially the height and arm length have definite decisive advantage in many games and sports, similarly segmental length of individual body parts, specifically the leg length and arm length are of considerable advantage in certain games. The anthropometric variables selected for the study are height, weight and arm length.

IMPORTANCE OF ANTHROPOMETRIC VARIABLES

Anthropometric measurements of body structure are the oldest type of body measurement, known, dating back to the beginning of recorded history. It was also an early type of testing in physical education. On the theory that exercise should be prescribed to affect muscle size, emphasis was placed upon muscle symmetry and proportion. In the year 1862 (Hit Chock) and later Sergeant produced profile charts to reveal how to individual compared with their standards.
Another use of anthropometry is to determine relationship between structure and motor performance. Observations of such relationship are common place observe the well proportional bodies of wrestlers and gymnasts, the super structure of great sportsman. The handball competitor’s solidarity of top-flight athletes they massive build's of great shot-putters and discus throwers.

In anthropometric measurements like as height, weight & arm length was likely to influence skill development and performance in the games.

Remaining the anthropometric measurements if we include influencing skill of the athletes development and performance of the players we be develop.

Height has the potential placement as preferable perquisite for the performance excellence in many sports or games. Anthropometric measurements have revealed co-relation between body structure and physical characteristics and sports capabilities.

Anthropometry is that branch of anthropology which is concerned with the taking of measurements of the human body. This definition has been confined to the kinds of measurements commonly used in associating physical performance with body build.

The measurement of structure and proportion of the body is called anthropometry. It has wide application as one of the essential parameter constituting the selective diagnostic of any games or sports.

The Anthropometry consists the marking of the external measurements of the players and human body and the results can be used to appraise body build, nutritional status and the posture.
In the human motor performance was a composite of many of variables. One of which is the structure of the body and the specific measurements of the Limb Lengths, Circumference, Breadths and the Body Build indices can reveal relationship between the anthropometry long legs to the length and mass of the body is build to jump.

Physique will be useful in choosing a suitable physical and mental activity for an individual because of the fact that according to physique they have too many mechanical advantages.

 Longer legs are helpful to take the necessary long strides over hurdles without the loss of time that jumping entails.

Tall structure and long lower extremities have been noticed in all games and events such as volleyball, basketball, high jump, pole-vault and goal-keeping where jump is involved. The height and reach of the players make better performance in these games and events.

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As we have seen, all mental activities involve the neuro-muscular system. The sense organs, the brain, the spiral cord, and the muscles are all very active whether the mental activity knows, feeling or doing. This is no way we can neither accept the old notice that psychology deals with the mind or the mental activities; nor can we accept the position of psychologists like Watson who assert that the scope of psychology should be limited only to emotion. Often emotion cannot be understood without knowledge of the experience, which influenced the action. Our desires and our thoughts
influence our activities. While psychology in its quest for general principles must observe and measures external emotion, it must also get information from the grown up human beings by asking them to describe verbally their own experience.

In a broad way we may state that psychology deals with two aspects of the problems of emotion. There is on the one hand the interest in the general laws of human emotion and experience; the aim of psychology is to formulate general laws which hold good of all human beings irrespective of their sex, race etc. On the other hand it aims at the study of individual differences. While all human beings are capable of learning, it is a familiar fact that some learn faster and take less time and some take longer time to learn the same activity, poem or song. This is due to differences in memory, intelligence etc. There are also differences regarding personality, leadership, and so on. Some of these differences are tied with age. There are differences between the activities of children, adolescents, adults and old people. It is the aid of development psychology to study these differences between the various stages in the growth of human beings. Differential psychology studies the differences between individuals. When we study them we find that these differences themselves obey certain general laws. Thus, the aim of psychology is to study the individual differences as well as the general principles of emotion.

We have studied different aspects of man: man the perceiver, man the needful, and man the adaptive. But it has always been clear that this tripartite division is merely one of convenience – for analytic purposes – and that man, functioning in his social and physical world is an indivisible unity who perceives and desires and learns simultaneously. We now turn to the task of synthesis – to – the task of describing the whole man.

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factors which distinguish you from your neighbour is the way your perceptual, motivational, and learning processes are organized into unique patterns of capacities: intelligence, abilities, talents, and aptitudes. It is this patterning and synthesis which helps makes you, you; which make you Jim McGraw, or Shirley Cohen, or Tony Morales instead of Mr. any man.

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Sport has become a psycho-social activity, full of tension, anxiety, fear and stresses. In competitive sports, teams and individual players play to win and this spirit of winning the matches and individual events causes many psychological stresses. So the job of the coach is to prepare or train the individual athlete as well as teams in such a way that the players individually as well as, in their capacity, as members of the team are to bear all types of stresses and overcome the effect of over-stresses and strains which may deteriorate the sports performance. The players need to undergo such an arduous, training that they should be able to have physical load during practice schedules and can have psychic stress during the period of competition, because it is during competition that athletes as well as teams inevitably come under psychological stress.
In modern competitive sports, the role of anxiety in sports performance has attracted the attention of sports scientists. As the physical load during training of sportmen for international competition is increasing day-by-day, the psychic stress during competition has been intensified. It has been realized that during their participation in competitive sports, the players and athletes are also anxiety-prone. Hence in these days, psychological training of the players and athletes has attracted a greater attention than in the past.

It is agreed by most of the sports scientists that besides developing the physical and physiological aspects of the players i.e. power, strength, endurance, agility and speed as well as providing the best type of the training, unit and unless the players and athletes the mentally prepared for contest, they cannot win in any competition or attain their peak performance which is considered the optimum objective of the modern sports.

Thus, it has become necessary to conduct research to know which psychological factors enhance sports performance. There is a need to conduct research on the national and international sportmen with respect to some psychological characteristic. It is also essential to know what type of emotional problems like anxiety, fear, aggressiveness or stresses occur when they have to face some strong opponent and how to overcome these problems to achieve the optimum level of achievement/performance. It may be possible if proper research on scientific lines is conducted on the top level sportmen. In view of this, five psychological variables namely visual reaction time, auditory reaction time, extraversion, neuroticism and competitive anxiety were selected and the relationship of disjunctive reaction time, both visual and auditory with extraversion, neuroticism and competitive anxiety was examined in the present study.

The great majority of empirical research in sport personality has utilized assessment devices which embody the factor theory as their main premise. As expressed by Cattell (1973), the factor theory searches for consistencies in behaviour. It is assumed that internal dispositions or traits are relatively stable.
and so enduring that they override environmental or situational influences. This infers that questions cold be asked in any situation and the responses to generalized to a sport situation. Thank for example he broad category of anxiety. Is knowing that a person low on an omnibus inventory of anxiety enough to conclude that he will never exhibit anxiety; are there no situations in which his heart rate may increase a little. The situation position as exemplified in Mischel's [1969] social learning theory, appears to go too far to the other extreme, entering into open debate with personalize. This paradigm can be regarded as the antithesis of the factor theory and maintains that behavioural variation is primarily a function of the situation in which a person is placed.

Emotion is open to observation. It can be studied in the same way in which other phenomena in the universe can be studied. But among human beings there is also experience alongside with emotion. The child who has learnt to speak will not only with draw his hand when he is pricked with a pin; he also shouts that it is hurting him. The pinprick not only leads to withdrawal, which is an observable emotion, it also leads to an experience, which is expressed in the statement that the is suffering pain. This experience is not open to observation by others; it is private, it is personal. Only the person experiencing can make an assertion about it. The ancient thinkers were generally concerned with the study and analysis of these experiences. These are the mental activities that we are conscious of. We not only experience them we are also aware of them. But every mental neuromuscular system is involved in all mental activity. A few decades ago the psychologist Watson tried to limit the scope of psychology to the near observation of human emotion so that other persons concern it only with phenomena open to observation. In other words, it was his intention that psychology should be completely objective. Since experience is private, subjective, he said, that it should not be included in the scope of psychology. Thus there was a swing from almost exclusive preoccupation with the analysis of experience to an
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The study of the abilities of man has been intimately tied up with intelligence testing. Literally millions of people, representing different ages, economic groups, cultures, nationalities and races have been subjected to intelligence testing of one kind or another. There are individual tests (where one person at a time is tested) and group tests (where hundreds of people at a time are tested); speed tests (where the scores are determined by the rapidity with which correct answers can be given) and power tests (where the difficulty of the task successfully completed determines the score); verbal tests (requiring verbal responses to questions) and performance tests (involving such nonverbal responses as stringing variously coloured beads in a specified order.

From these tests we have accumulated much useful information. We can fairly quickly and reliably determine where a person stands in relation to any reference group of his fellows, and on the basis of this we can predict a number of things about his performance in various situations. But the
question of what it is we are testing, the question of what is “intelligence”, remains unanswered.

Intelligence is a concept variously used and variously defined. Some people define it as the ability to adapt to new circumstances, others as the ability to learn, and still others as the capacity to deal with complex and abstract material.

Different psychologists have championed these (and other) definitions of intelligence, and much research has been addressed to these questions. However, none of this research has resulted in a clear definition of intelligence. For this reason many psychologists today have reached the point where they no longer ask “What is intelligence?” They have decided that they can do a useful job in measuring intelligence without defining it. In this respect they are doing what the early physicists did when they studied heat. Long before the physicists could agree on a sound definition of heat they have invented reliable thermometers to measure changes in temperature and with these instruments they were able to discover many important physical laws.

Standardization of intelligent tests. But all of the above statements are relative to the group on which the test was standardized. To say that the “average” ten-year old can pass certain items of an intelligences test implies, of course, that we have previously tested a representative sample of the entire population of then year old children. This procedure is called standardizing the test items. The problem of obtaining a sample truly representative of the entire population is beset with difficulties. If the unrepresentative of the entire population of children the intelligence test was standardized on a sample which did not adequately include children of the lower economic groups, merely use this test to measure the I.Q. for these children. This is but a reflection of the fact that the I.Q. is a relative score, not an absolute score.

Adult I.Q.’s We have seen that intelligence, as measured by our available tests, does not grow at the same rate after puberty as it does prior to
that age this means, of course, that the concept of I.Q. cannot have the same meaning for an adult as it does for a person younger than about 16. In order to use the I.Q. unit for adults, several simplifying assumptions have been made. In computing a Stanford–Binet I.Q. for anyone over the age of 15 the person is given a chronological age of 15 no matter how old he really is. This is done because it is assumed that the average adult has stopped growing in intelligence at that age.

Since the Stanford-Binet test has been standardized on children and very young adults (up to the age of 18) many psychologists do not consider it an adequate test for older adults. In response to these difficulties a number of tests have been developed especially for adults. Among the most commonly used of these is the Wechsler Adult Intelligence Scale which consists of two parts – a verbal part and a performance part, each consisting of five kinds of items. The verbal part includes information, comprehension, vocabulary, memory span for digits forwards and backwards, arithmetical re zoning, etc. The performance scale includes tasks involving object assembly (putting together cut out parts to complete a figure such as a human profile – very much like a jig– saw puzzle), picture completion, picture arrangement, etc. It is of interest to note that the correlation between the Stanford–Binet and the Wechsler Adult Intelligence Scale is about 85.

By way of summary, in selecting items to differentiate the more intelligent from the less intelligent children, intelligence test constructors usually follow several guiding principles in the first place, the content of the items must, on the fact of it, be “intellectual” in nature; secondly, items must discriminate between children of different ages, such that percentage of children passing the item must increase with increase in age. Other considerations also have been taken into account the items should be reasonably easy to administer and score, should sample a wide variety of tasks, and should reflect the experiences common to all children.
The use of such items when standardized on representative samples enables us then to convert the raw scores earned on intelligence tests into age scores and I.Q. scores. When this is done we find that intelligence shows a fairly constant developmental growth up to the age of approximately 14 years. This can be taken as a “known group” validation of the intelligence test. But this very fact makes for difficulties in using the I.Q. concept when measuring adult intelligence.

The bicycle but to preserve status with the gang, go to school, or show off. Physical training is an older but still used term to describe the training of the physical components of the body without any necessary reference to the purposes which are significant in modern education. It should not be confused with physical education. They are not synonymous, as we shall see in the chapters which follow.

Nor should the term physical education be allowed to imply a separation from the mental and thus perpetuate the unfortunate but traditional notion that man exists as mind and body, and that education is concerned with only one, or at the most two, of these parts. The concept of man as a unified being makes confusion on this score unnecessary. The physical education is most importance part of the score in human life. The natural movement of active plays or influence of everyone who are working in the field of physical education.

It has been said frequently that people in the United States are among the most sports-loving in the word. Each year millions play and other millions watch. It is common for a person to be a spectator at a contest one day and a participant the next. He may watch a baseball game, play golf, take in a tennis match, or fish, all on the same week end. There is no great class of spectators and another of participants. Many millions are skilled at both and gain from both certain elemental satisfactions.
How wide is the participation? Such things are not easy to appraise accurately, but it is probably safe to say that if there are forty million children less than 12 years of age, forty million of them at one time or another play tag or two o’cat or hide-and-seek. They develop their own version of baseball on city streets and call it stick ball. Or they play marbles under the elms in the village square. Hundreds of thousands of them annually put on their first roller skates or master the technique of the bicycle. And some are fortunate enough to learn to ski or ice-skate. More than half of them develop a love for swimming in pools and lakes and rivers. Over the years, there has developed a very real conviction that childhood is a time for play and that our children must have a full measure of it if life is to be judged good. Time enough later on, we say, for the serious business of making a living or establishing a home. Play now while you are young and can enjoy it to the fullest!

In American there are roughly fourteen million men and women who fish for sport each year, and thousands more who do it for a living. These fishermen spend a billion dollars a year on their equipment. There are millions of licensed hunters and millions more who shoot for fun at targets. Golf attracts six million people every year, and howling is the favorite sport of perhaps even more. The six billion dollars or more invested in motorboats in the inland and slat waters of the country, when added to the amount spent by those who canoe or sail, brings boating into focus as one of the most popular sports on the American scene. More than seventy million people pay to attend baseball contests each year. They come to see hundreds of thousands of players. Roughly sixty million people watch football each season; the players in action range from little fellows barely able to see from under their oversized helmets to great professionals stars who play the game for money. Dancing in one or more of its various forms attracts vast numbers. Whether in the round dance of the ballroom or the square dance of the ballroom or the square dance of the husking bee or carnival young and old find in dance the answer to their need for self-expression and for fun. The dancing classes of the country are filled with children learning not merely the steps but also the social skills that go with the particular forms of dance most frequently used in our
society. Summer find hundreds of thousands bound for the beach, the
mountain lakes, and the neighborhood swimming pools. Swimming, diving,
surfboarding, scuba diving, water-skiing, and boating have their devotees; the
water seems to challenge the skills of people of all ages. These activities offer
emancipation from the restrictions on movement which our society imposes
through the highly conventional life we are supposed to lead. People fret
under such restrictions and, when the opportunity is at hand or can be
created, revert to the natural state of willing participation in play.

Sport has become a psycho-social activity, full of tension, anxiety, fear
and stresses. In competitive sports, teams and individual players play to win
and this spirit of winning the matches and individual events causes many
psychological stresses. So the job of the coach is to prepare or train the
individual athlete as well as teams in such a way that the players individually
as well as, in their capacity, as members of the team are to bear all types of
stresses and overcome the effect of over-stresses and strains which may
deteriorate the sports performance. The players need to undergo such an
arduous, training that they should be able to have physical load during
practice schedules and can have psychic stress during the period of
competition, because it is during competition that athletes as well as teams
inevitably come under psychological stress.

In modern competitive sports, the role of anxiety in sports performance
has attracted the attention of sports scientists. As the physical load during
training of sportmen for international competition is increasing day-by-day,
the psychic stress during competition has been intensified. It has been
realized that during their participation in competitive sports, the players and
athletes are also anxiety-prone. Hence in these days, psychological training of
the players and athletes has.

It is agreed by most of the sports scientists that besides developing the
physical and physiological aspects of the players i.e. power, strength,
endurance, agility and speed as well as providing the best type of the training,
unit and unless the players and athletes the mentally prepared for contest, they cannot win in any competition or attain their peak performance which is considered the optimum objective of the modern sports.

Thus, it has become necessary to conduct research to know which psychological factors enhance sports performance. There is a need to conduct research on the national and international sportsmen with respect to some psychological characteristic. It is also essential to know what type of emotional problems like anxiety, fear, aggressiveness or stresses occur when they have to face some strong opponent and how to overcome these problems to achieve the optimum level of achievement/performance. It may be possible if proper research on scientific lines is conducted on the top level sportsmen. In view of this, five psychological variables namely visual reaction time, auditory reaction time, extraversion, neuroticism and competitive anxiety were selected and the relationship of disjunctive reaction time, both visual and

Increasing number of research studies have used 16 P.F. (Cattell, 1965) method of assessing personality. This has had the advantage of making some comparisons between the findings of different investigators though reviewers still find a great deal of difficulty in coming to clear cut and generalized conclusions from the evidence now available. Interpretation is made difficult by the variety of systems used for selecting and classifying subjects, by the different analytical methods employed and essentially by the absence of either formulated hypotheses or theoretical frameworks. Nevertheless, a number of detailed reviews of the empiric research are available (Cofer and Johnson, 1960; Warburton and Kane, 1967; Ogilvie, 1968; and Husman, 1969) and from these a number of testable hypotheses may be assembled for further rigorous research. These reviews tend to give a personality description of the male athlete or physically gifted individual in terms of extravert tendencies (such as high dominance, social aggression, leadership, tough mindedness) and general emotional control reflected in such trait measurements as low anxiety and high confidence. Women athletes are most often described as being like the men athletes on the extraversion dimension but being unlike them in showing a lower level of emotional control. There are, of course, many exceptions to these general descriptions which have been reported and no doubt both the nature of the physical activity or
sport in question and the subjects level of participation will in some way be reflected in characteristic ways of behaving. When the activity and level of participation are held constant interesting consistencies in personality have been demonstrated and evidence presented in support of the existence of certain sports types for example, a soccer type (Kane, 1966), or racing driver type (Ogilvie, 1968) and a wrestlers type (Kroll, 1967). In the search for possible sports types and more generally, in the comparison of personality group profiles, the use of discriminant function analysis has become fashionable. Many studies have relied for interpretation on a simple comparison of the personality measures set out in profile form. The Cattell 16 P.F. may, for example, be conveniently set out in profile fashion showing the norm scores on the sixteen dimensions and a profile similarity coefficient may be used to assess the level of agreement between group profile pattern. However, the simple comparison of profile dimensions taken one at a time has the disadvantage that the profile as a whole is never considered nor is the relative importance of dimensions emphasized.

Indian and Western Concepts of Personality

The word personality was first used by Cicero (106-43B.C.) to mean as one appears to others and also, the part played by one in one’s life. The root of personality is persona, a Greek word, which means a mask one wears in a drama or a role one plays in a drama or in social situations. Other derivatives of persona are: to personate i.e. to pretend to be, personable i.e. pleasing and good looking etc. The concept of personality has developed through years from persona effect to the one’s adjustment with a given environment and finally has led to the definition which is comprehensive enough: most characteristic integration of an individual’s physical structure, modes of behavior, interests, attitudes, capacities and aptitudes.

Indian concept of personality is amply indicated by the term vyaktitva that has Anj as root and tin as suffix. Anj means to bring out or to make
explicit. It connotes that there is something which can be made explicit viz. sukshma sarira or subtle body. This suksmasarira has two main aspects, knowledge and activity. Thus, we see that the concept of vyaktitya has deeper areas to touch. Dr. Indrasen of Pondicherry has said, Indian concept of personality analyses its normal make up, discovering and devising the conditions of its growth and delineating the quality and character of its highest status. In simple words, it speaks about what man is, what he can become and how he can become that. If we compare both the definitions we find that the Western concept is silent about the origin of personality while Indian concept indicates sukmsa sarira (subtle body) as the very basis of one’s personality. As well, the Western concept does not indicate developmental aspect, sufficiently, while the Indian one does.

**Development of the Concept of Personality**

Individuality or uniqueness of a person was given greater attention in the beginning which culminated into the development of (1) Idiographic approach whereby each individual is considered a unique entity by virtue of his unique heredity and environment. Then the psychologists thought of similarities in different individuals. This approach came to be known as (2) Nomothetic approach. Even today, for clinical purposes, idiographic approach is indispensable while for psychosometric purposes Nomothetic approach is used. Then psychologists tried to accommodate both the approaches. Thus, the trait approach was born. Introversion, extroversion, gregariousness, neuroticism etc. are commonly known traits today. Eysenck advocated three traits viz. Introversion, Extroversion and Neuroticism. Guilford’s test of temperament has trait list that includes activity, restraint, ascendency, sociability, emotional stability, objectivity, friendliness, thoughtfulness, personal relations and masculinity. Traits can number as many as 4000 plus and also as less as only two viz. extraversion and introversion. Statistical methods were used by Cattel to narrow down the trait number. Main points of criticism labeled against trait approach are (1) a particular trait can be
perceived differently by different persons (2) In critical incidents the person may not show his fixed trait, often exhibited by him in normal circumstances. The same may be dominant in one situation and submissive in another. The ancient Greeks used four types viz. Sanguine, Phlegmatic, Melancholic and Choeric, based on body humors. Kreshmer’s classification includes (1) asthenic (2) athletic (3) pyknic (4) dysplastic. Sheldon used endomorphic, mesomorphic and ectomorphic body types to correlate temperament of individuals. Friedman’s type approach has received a wider acceptance, wherein Type A and Type B personality are all important types. Recently, Type C has been added into it.

Main lines of criticism of Type approach: (1) cause and effect relationship cannot be formed, as has been evident through various research findings. (2) Types are like pigeon holes, fixed and rigid.

The physical fitness as refer to new dynamic and physiological state of individual and continuum from the optimal human performance to server and death of people. The players would be found towards the above and the continuum fluctuating up and down and depending on their state training whilst at the other conditions of lines could exist while this term may be satisfactory in descriptive sense, problems arise when we try to measure to develop the complexity arises because the physical fitness is made up of series components. If we sow the example like... speed, agility, strength, endurance, flexibility & co-ordination each one of which makes some independent contribution to the whole state while some of these components & very little of anther.

HEALTH RELATED PHYSICAL FITNESS

Those aspects of physical and psychological makeup that afford and individual some protection against coronary heart disease, problems
associated with being overweight muscle and joint ligament and the physiological complications of responding to stress.

This aspect of physical fitness is concerns the development of qualities which is necessary to function efficiently and maintain the human life is a healthy life style. If we sow the components of the health related physical fitness are cardio-reparatory endurance and muscular strength & the endurance, and body composition.

COMPONENTS OF HEALTH RELATED PHYSICAL FITNESS

Health-related fitness requires desirable levels of cardio-vascular fitness, percentage body fat, flexibility and endurance. These help to prevent the incidence and severity of degenerative types of disease and increase work efficiency. The cardio vascular fitness refers to the efficiency of lungs and heart. Muscular strength and endurance is the capacity of the muscles to work against the resistance for longer time. Flexibility is the ability to move a joint freely through its complete range of movement. Percentage of body fat refers to the proportion of an individual’s total body fat. Modern physical education sees these skills more as a means to an end than as absolute or continuing in themselves.

As a matter of fact there are very few movements performed, or skills developed, which are persisted in merely for their own value, even in infancy and childhood. As soon as a goal is desired the movement or skill needed to attain it is practiced. The child who wants the cookie learns to walk over and get it. A child learns to ride a bicycle not just in order to ride the bicycle but to preserve status with the gang, go to school, or show off. Physical training is an older but still used term to describe the training of the physical components of the body without any necessary reference to the purposes which are significant in modern education. It should not be confused with physical education. They are not synonymous, as we shall see in the chapters which follow.
Nor should the term physical education be allowed to imply a separation from the mental and thus perpetuate the unfortunate but traditional notion that man exists as mind and body, and that education is concerned with only one, or at the most two, of these parts. The concept of man as a unified being makes confusion on this score unnecessary. The physical education is most importance part of the score in human life. The natural movement of active plays or influence of everyone who are working in the field of physical education.

It has been said frequently that people in the United States are among the most sports-loving in the word. Each year millions play and other millions watch. It is common for a person to be a spectator at a contest one day and a participant the next. He may watch a baseball game, play golf, take in a tennis match, or fish, all on the same week end. There is no great class of spectators and another of participants. Many millions are skilled at both and gain from both certain elemental satisfactions.

How wide is the participation? Such things are not easy to appraise accurately, but it is probably safe to say that if there are forty million children less than 12 years of age, forty million of them at one time or another play tag or two o’cat or hide-and-seek. They develop their own version of baseball on city streets and call it stick ball. Or they play marbles under the elms in the village square. Hundreds of thousands of them annually put on their first roller skates or master the technique of the bicycle. And some are fortunate enough to learn to ski or ice-skate. More than half of them develop a love for swimming in pools and lakes and rivers. Over the years, there has developed a very real conviction that childhood is a time for play and that our children must have a full measure of it if life is to be judged good. Time enough later on, we say, for the serious business of making a living or establishing a home. Play now while you are young and can enjoy it to the fullest!

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ABOUT ANTHROPOMETRIC

The study of human physical measurements by anther science
anthropometry. Which was wide application as one of the essential
parameters constituting the selecting diagnostics of any game or sports.

The study of body type has significant place in the field of sports.
The physical structure especially the height and arm length have definite decisive advantage in many games and sports, similarly segmental length of individual body parts, specifically the leg length and arm length are of considerable advantage in certain games. The anthropometric variables selected for the study are height, weight and arm length.

IMPORTANCE OF ANTHROPOMETRIC VARIABLES

Anthropometric measurements of body structure are the oldest type of body measurement, known, dating back to the beginning of recorded history. It was also an early type of testing in physical education. On the theory that exercise should be prescribed to affect muscle size, emphasis was placed upon muscle symmetry and proportion. In the year 1862 (Hit Chock) and later Sergeant produced profile charts to reveal how to individual compared with their standards.

Another use of anthropometry is to determine relationship between structure and motor performance. Observations of such relationship are common place observe the well proportional bodies of wrestlers and gymnasts, the super structure of great sportsman. The handball competitor’s solidarity of top-flight athletes they massive build's of great shot-putters and discus throwers.

In anthropometric measurements like as height, weight & arm length was likely to influence skill development and performance in the games.

Remaining the anthropometric measurements if we include influencing skill of the athletes development and performance of the players we be develop.
Height has the potential placement as preferable perquisite for the performance excellence in many sports or games. Anthropometric measurements have revealed co-relation between body structure and physical characteristics and sports capabilities.

Anthropometry is that branch of anthropology which is concerned with the taking of measurements of the human body. This definition has been confined to the kinds of measurements commonly used in associating physical performance with body build.

The measurement of structure and proportion of the body is called anthropometry. It has wide application as one of the essential parameter constituting the selective diagnostic of any games or sports.

The Anthropometry consists the marking of the external measurements of the players and human body and the results can be used to appraise body build, nutritional status and the posture.

In the human motor performance was a composite of many of variables. One of which is the structure of the body and the specific measurements of the Limb Lengths, Circumference, Breadths and the Body Build indices can revel relationship between the anthropometry long legs to the length and mass of the body is build to jump.

Physique will be useful in choosing a suitable physical and mental activity for an individual because of the fact that according to physique they have too many mechanical advantages.

Longer legs are helpful to take the necessary long strides over hurdles without the loss of time that jumping entails.

Tall structure and long lower extremities have been noticed in all games and events such as volleyball, basketball, high jump, pole-vault and
goal-keeping where jump is involved. The height and reach of the players make better performance in these games and events.

observation. In other words, it was his intention that psychology should be completely objective. Since experience is private, subjective, he said, that it should not be included in the scope of psychology. Thus there was a swing from almost exclusive preoccupation with the analysis of experience to an almost exclusive preoccupation with the analysis of experience to a campaign for the abandonment of experience.

As we have seen, all mental activities involve the neuro-muscular system. The sense organs, the brain, the spiral cord, and the muscles are all very active whether the mental activity knows, feeling or doing. This is no way we can neither accept the old notice that psychology deals with the mind or the mental activities; nor can we accept the position of psychologists like Watson who assert that the scope of psychology should be limited only to emotion. Often emotion cannot be understood without knowledge of the experience, which influenced the action. Our desires and our thoughts influence our activities. While psychology in its quest for general principles must observe and measures external emotion, it must also get information from the grown up human beings by asking them to describe verbally their own experience.

In a broad way we may state that psychology deals with two aspects of the problems of emotion. There is on the one hand the interest in the general laws of human emotion and experience; the aim of psychology is to formulate general laws which hold good of all human beings irrespective of their sex, race etc. On the other hand it aims at the study of individual differences. While all human beings are capable of learning, it is a familiar fact that some learn faster and take less time and some take longer time to learn the same activity, poem or song. This is due to differences in memory, intelligence etc. There are also differences regarding personality, leadership, and so on. Some of these differences are tied with age. There are differences between
the activities of children, adolescents, adults and old people. It is the aid of development psychology to study these differences between the various stages in the growth of human beings. Differential psychology studies the differences between individuals. When we study them we find that these differences themselves obey certain general laws. Thus, the aim of psychology is to study the individual differences as well as the general principles of emotion.

We have studied different aspects of man: man the perceiver, man the needful, and man the adaptive. But it has always been clear that this tripartite division is merely one of convenience – for analytic purposes – and that man, functioning in his social and physical world is an indivisible unity who perceives and desires and learns simultaneously. We now turn to the task of synthesis – to – the task of describing the whole man.

One of the first things to become apparent as we turn our attention to the whole man is that he manifests himself in infinite variety. There has never been a person exactly like you, and there never will be. And one of the major factors which distinguish you from your neighbour is the way your perceptual, motivational, and learning processes are organized into unique patterns of capacities: intelligence, abilities, talents, and aptitudes. It is this patterning and synthesis which helps makes you, you; which make you Jim McGraw, or Shirley Cohen, or Tony Morales instead of Mr. any man.

The study of the abilities of man has been intimately tied up with intelligence testing. Literally millions of people, representing different ages, economic groups, cultures, nationalities and races have been subjected to intelligence testing of one kind or another. There are individual tests (where one person at a time is tested) and group tests (where hundreds of people at a time are tested); speed tests (where the scores are determined by the rapidity with which correct answers can be given) and power tests (where the difficulty of the task successfully completed determines the score); verbal tests (requiring verbal responses to questions) and performance tests
(involving such nonverbal responses as stringing variously coloured beads in a specified order.

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In modern competitive sports, the role of anxiety in sports performance has attracted the attention of sports scientists. As the physical load during training of sportmen for international competition is increasing day-by-day, the psychic stress during competition has been intensified. It has been realized that during their participation in competitive sports, the players and athletes are also anxiety-prone. Hence in these days, psychological training of the players and athletes has attracted a greater attention than in the past.

It is agreed by most of the sports scientists that besides developing the physical and physiological aspects of the players i.e. power, strength, endurance, agility and speed as well as providing the best type of the training, unit and unless the players and athletes the mentally prepared for contest, they cannot win in any competition or attain their peak performance which is considered the optimum objective of the modern sports.
Thus, it has become necessary to conduct research to know which psychological factors enhance sports performance. There is a need to conduct research on the national and international sportsmen with respect to some psychological characteristic. It is also essential to know what type of emotional problems like anxiety, fear, aggressiveness or stresses occur when they have to face some strong opponent and how to overcome these problems to achieve the optimum level of achievement/performance. It may be possible if proper research on scientific lines is conducted on the top level sportsmen. In view of this, five psychological variables namely visual reaction time, auditory reaction time, extraversion, neuroticism and competitive anxiety were selected and the relationship of disjunctive reaction time, both visual and auditory with extraversion, neuroticism and competitive anxiety was examined in the present study.

The great majority of empirical research in sport personality has utilized assessment devices which embody the factor theory as their main premise. As expressed by Cattell (1973), the factor theory searches for consistencies in behaviour. It is assumed that internal dispositions or traits are relatively stable and so enduring that they override environmental or situational influences. This infers that questions could be asked in any situation and the responses to generalized to a sport situation. Thank for example he broad category of anxiety. Is knowing that a person low on an omnibus inventory of anxiety enough to conclude that he will never exhibit anxiety; are there no situations in which his heart rate may increase a little. The situation position as exemplified in Mischel’s [1969] social learning theory, appears to go too far to the other extreme, entering into open debate with personalize. This paradigm can be regarded as the antithesis of the factor theory and maintains that behavioural variation is primarily a function of the situation in which a person is placed.

Emotion is open to observation. It can be studied in the same way in which other phenomena in the universe can be studied. But among human beings there is also experience alongside with emotion. The child who has
learnt to speak will not only with draw his hand when he is pricked with a pin; he also shouts that it is hurting him. The pinprick not only leads to withdrawal, which is an observable emotion, it also leads to an experience, which is expressed in the statement that the is suffering pain. This experience is not open to observation by others; it is private, it is personal. Only the person experiencing can make an assertion about it. The ancient thinkers were generally concerned with the study and analysis of these experiences. These are the mental activities that we are conscious of. We not only experience them we are also aware of them. But every mental neuromuscular system is involved in all mental activity. A few decades ago the psychologist Watson tried to limit the scope of psychology to the near observation of human emotion so that other persons concern it only with phenomena open to observation. In other words, it was his intention that psychology should be completely objective. Since experience is private, subjective, he said, that it should not be included in the scope of psychology. Thus there was a swing from almost exclusive preoccupation with the analysis of experience to an almost exclusive preoccupation with the analysis of experience to a campaign for the abandonment of experience.

As we have seen, all mental activities involve the neuro-muscular system. The sense organs, the brain, the spiral cord, and the muscles are all very active whether the mental activity knows, feeling or doing. This is no way we can neither accept the old notice that psychology deals with the mind or the mental activities; nor can we accept the position of psychologists like Watson who assert that the scope of psychology should be limited only to emotion. Often emotion cannot be understood without knowledge of the experience, which influenced the action. Our desires and our thoughts influence our activities. While psychology in its quest for general principles must observe and measures external emotion, it must also get information from the grown up human beings by asking them to describe verbally their own experience.