CHAPTER - I
INTRODUCTION

For thousands of years, and in all societies, man has subconsciously developed his basic instinct for play into the organization of complex games and sports having definitive rules and specific boundaries. Such organization has been undoubtedly reinforced by wide social acceptance, with participation being enhanced by the popularity of sports to such an extent that it has now become an integral part of our modern society. The organizing of games and sports into a complex structure has developed to such a super technological level in some sports that are many people concerned that the play element may disappear entirely from sport. Although this is mainly a viewpoint concerned with "values". It is obvious importance for people involved in sports to understand exactly what is meaning term game and sports for them, and to determine what role it possesses in the large context of sports.

One challenge today is becoming more difficult as man’s complex way of life to live more effectively in the present as well as in the future and to make acceptable adjustments. Unlike past generations where crises occurred only occasionally, modern man lives with crises daily at home and world wide. These crises are natural spin off from the great changes that are occurring. To survive them, even greater change must occur. As old values dim and in some cases flicker out, there has evolved a value crisis – what and whom to believe. The world is in its greatest transition period in history. To expect that cataclysmic changes will occur without turmoil dissension or perhaps even violence is too much to hope for. There are no clear cut answers concerning how these great
difficulties can be resolved. Since the present is like bridge spanning the gulf between two worlds. One that is disappearing in and one that is still emerging.

Today truly a critical period for tomorrow with its apocalyptic threats to survival. It is like standing on the edge of history between past and future. Society, so demanding that more is required for individual than ever before in the way of learning and ability to adjust. These complexities are constantly being accelerated. As the future begins to unfold, it becomes increasingly clear that some guidelines must be established in order to meet the demands of what may a total new order, brought on in some cases by militant minorities and emerging Nations, but chiefly be subtle peaceful revelations is a wide area of human concern. Perhaps along the other aspects that are a residue of burgeoning culture act, react and interact to make our times the most complex of any era in History.

Paradoxically, modern culture presents two ends of a spectrum. It is not only has the potential for optimal in livin but also the potential to man’s threat to himself and his ultimate destruction. Modern society is characterized by a constellation of interacting processes, and the challenge of solving problems growing out of these processes to further complicated when the solutions, tend to become part of the problem. For example, consider the problem of democratic, technological society, on one hand it seems that a technological culture has taken the drudgery out to man’s work and has freed him form his need to exercise and to struggle in order to be physically strong and fit. The paradox is of course that the biological necessity for exercise is still there, and only through man’s values, will and free choice not his demanding environment, can
this promotional need to meet. Thus it may well be said that race survival in the future will depend more on the physical fitness, self disciplined citizenry than on any other factors of our society, its value system and to her culture.

Technology and sciences have enabled modern youth to develop physical capabilities beyond anything imagined. During the twentieth century, sports became a cultural phenomenon of great magnitude and complexity, having consequences for both the individual and the society at large. Sports have been part of civilized society throughout history. In some cases, as in Greece during the fifth century B.C. sports had been of central importance to the culture. The very elaboration of sports, its internal conventions of every kind, its ceremonies and its endless meshes entangling itself are the purpose of training, testing and rewarding.

Games and sports are not merely fun, games and diversions or entertainment. In sports athletes often strive for perfection, just as many people do in religious orders. In sports as in religion, there are heroes and heroines who provide models for the perfection to be strived for, who are admired for what they did, becoming almost like saints in the religious nature of sports. Since ancient time these activities in the shape of running, jumping, and throwing have been a natural part of man’s existence whether it was hunting animals for food or escaping from the wild and dangerous species. However, lately these activities become pleasurable and competitive, Leading to desire for improving his own speed of movement or ability to compete in these competitions. The development in the present century in all walks of human life has surprised the progress of thousands and years, and sports are also a part of life. It has become a very important and integral part of total
educational process. Through the well directed programme, children develop skills for the worth use of leisure time, engage in activities that are conductive to healthy living and all these endeavors lead to their physical, social mental and emotional health.

In competitive sports, there is interplay of numerous factors physique and condition of health, psychic values, general physical fitness, technical efficiency, specific capacity of the organism. Tactical skills and competitive experience are some of the principle factors, which influence results attained by sports persons. The present state of competitive sports that is the peak performance of large number of sports persons in a great majority of sports disciplines came close to the prevailing world records is a proof that great performance in sports is no longer a primarily question of available facilities and even less, often the results as, purely individual efforts. But the out come of deliberately planned, scientifically based advanced training technique designed to improve the standard of performance. Now it has become a necessity to identify and select a future elite athletes right in childhood or adolescence. It takes many years of intensive regular training till an international sports performance lord is achieved.

Sports are in any form of play full competition whose out come is determined by physical skill, strategy or chance employed. Each individual or team which participates in any sports even ‘Want to Win’ because society attached great significance to ‘winning’. According to Renwes (1972)¹ “Performance is the Keynote of all sports – Its basic principle”. Since sports have become a prestigious aspect to provide one’s superiority. The philosophy of participation in games or sports has undergone a great change.
Games and sports have become a highly specialized competitive area of human activities. Every nation is trying hard to produce sports persons who would bring Laurels home under various competitions at international level. Such Laurels in sports have already acquired a certain prestige value for participating nations. It is natural, therefore, the improving the standard in the field has become a focal point of attention, in the efforts on the past of physical educators coaches, training method based on psychology, physiology anthropometry, physical sciences and general education etc., to make a good achievement level of sports persons in the international competitions.

Progress and high degree of achievement are true reflections of competitions. On the present day world performance in various events are touching sky high and it seems that it will go further higher and higher it-requires a highly scientific approach to achieve high level of performance and this should start right from the level of identifying talents. The development of a sports persons, enable him to achieve high. Level of performance is usually concentrated upon four areas namely physical power, social adjustment, psychological development and physiological efficiency. Different activities make different demands from the organism with respect to circulatory, respiratory metabolic, neurological and temperature regulating functions. In the modern scientific age, in every field of human endeavour, systematic, objective and scientific procedures are followed in accordance with the principles based on experience, under standing and applications of knowledge of science.

In advanced countries like USA, East and west Germany, China, Russia, Australia, Britain and others; the rapid progress in the field of
games and sports have taken place and their international achievement have been possible only due to research, experimentation and application of scientific knowledge.

Hand Ball and Basket Ball are no exception and also have been considered as major games and sports. Which involves competition, use of physical skills and strategy. These game are in the sense of defined here, by Almond (1983)\(^2\). These games have primary rules of a game and these rules identify how the games are to be played and how winning can be achieved. The primary rules of the both games make these games as a games and sports.

**Basket Ball and Hand Ball**

In modern day, preparations of a sports man for competition are carried out through joint efforts between the sports scientists, the practioners, and coaches. It is recognized by present day that the supervisory method of preparing athletes for competition is one which is based on proven scientific principles rather than on trial and error, or on empirical judgment. Performance improvement is most events of sports and games including Basket Ball and Hand Ball observed in recent year are credited to the merger of talents of coaches and scientists.

Basket Ball the game was borne in December 1891 at spring field college, USA is played with skill fitness, team work and strategy making it fast and thrilling sports. Players body is found to be better fundamentalist. All rounder players with ability and skill in all phases of the game passing, dribbling, shooting and rebounding.

Basket Ball which is a physical activity is considered as the fast test game of the world after ice Hockey, In the fare of 1891, Gullick,
head of physical education department, YMCA, Training school (Presently known as spring Field College) Spring field, Massachusetts assigned a task to Dr. James Naismith, Physical Training Instructor to invent an outdoor game for winter, arouse competitive instinct of players as well as provide them to do all round exercises and have minimum chance of injury Dr. James Naismith known as the father of Basket Ball invented the game and the first public demonstration of Basket Ball was held on March 11th 1892, As the game gained popularity and spread all over the Country. Girls look it up with almost the same gusto as boys. Smith college in Massachusetts was the first women college to start playing basket Ball in 1893 (Dufy, 1990). The pleasure and thrills that the game provides have attracted the people of all classes to play basketball. This game has progressed to be world-wide game; internationally popular and universally accepted. It is one of the most strenuous and thrilling games and it demands a high degree of physical fitness, motor fitness elements. Such as speed, strength and endurance, etc. If the fan would like little time to learn more about the game, it would bring him even more thrills than it has in the past. In reality, basket ball is highly organized game with recognized system of play, comparable to other game.

As per norms, the basket ball is a game as well as sports. It is an interesting game and easy to learn. It is a team game and it enhances enjoyment of team play. Regular basket ball players advocated that the game make them feel better, friendly and happier. It can be played out door and indoors. The basket ball game is composed of 12 players an objectives of the basket ball is to score (or make maximum basket on the opponent. All over fundamentals are used to help player to get an
opportunity to score in the opponent basket. No higher premium is placed on any phase of the game than shooting and scoring. The game of basket Ball has got various fundamental skills, like players stance and ball handling, parsing dribbling, shouting, rebounding pivoting, tacking and individual defense.

Today Basket Ball is at the zenith of its popularity. The Encyclopedia American estimates that it is played and watched by more Americans than any other sports. The Crestar watching American basket ball extends to other countries and 200 millions house halls views its matches on regular or irregular basis. A present basket ball is player all over the world. More than 155 National Federation are affiliated to FIBA over the year. This versatile game has establish an important place among sports and game.

Basket Ball was introduced in Indian, some eighty five years ago by the YMCA Calcutta after the YMCA college of physical education which way started in Madras, played an important role in popularizing the game. But in India we are not able to make such head way as far as international competitions are concerned because of lack of facilities and advance scientific coaching. The performance of India’s basket ball players at international level has been of great concern to the coaches scientists and physical educationists. Efforts have been and are being made to improve the standard of our sportsmen, but little has been achieved in this respect.

**Hand Ball**

Hand ball is a popular, spectacular and dynamic sports. It requires speed, strength, power, stamina, endurance fitness and above all team work. Over 15 million people play the game approximately 140 countries around the ward. It is a wonderful mixture of soccer, basket ball and a
few water polo tactics thrown in. Handball is one of the most popular sports in Europe (after soccer) and is one of the fastest growing sports in Northern Asia, Africa and America. It is a fascinating sport fast, dynamic, fun and any one can play and enjoy it. Requires minimum equipment, 14 people can exercise at once. It is a game of movement. Players should have running speed to move forward, side ward and backward both for offence and defense. It is essential for every player to play the match with various type of movements for sixty minutes, with ten minutes half time break, with varying pace from slow to fast, according to the situation of the ball or well as appointment movement, which requires endurance capacity. Successful performance in Handball requires agility and coordinative abilities to facilitate rapid changes in direction, sudden stops, bends, twist, falls and dives, Power to throw the ball helps to elevate the players to perform a successful throw on goal, and throw the ball longer distance with high speed at the time of initiating the fast break. Most of the throw on goal are performed either jump shot high which require explosive power.

It is a game played between the two teams having seven players each side. Playing ground (area) measuring 40 mts. X 20 mts in length and width. As per rules players carry, dribble and throw the ball with hands only. The teams who score more goals on the opponents become victorious. The duration of the game is 25 minutes each half with 10 minute interval.

Hand ball was introduced in 1904, Haljer Nelson was the founder of handball. He introduced this game and gave it the name Hand Ball. In 1904 to 1906, women’s handball was added to the roster of Olympic sports, at the 1976 Montréal games,The Soviet Union was the first
country who won Gold Medal. In India, we are far behind in Hand Ball game against many countries and needed more work on this game.

The principles behind playing Hand Ball for women are basically the same as for men. Although women have a different shape, physique and power/weight ratio. A good women Hand Ball players has to be as good as an average male players. The tempo of the game is set by ability of the players as it involves a fascinating vary of skills and qualities. Quickness speed with long stride, smooth Dibberling and combined with balance along with quick tactical decision and handling The pressure of opponent etc. are needed in this game. Hand Ball is very popular and known as speedy and skillful game. In any researchers i.e. Stein Federalhal (1977). Enerat and Longoff (1977) and Carcot (1984) have conducted that performance in Hand Ball depends upon general physical fitness, skills involves in game, tactical abilities and competitive abilities of players. Hand Ball Skills are relatively more important and basic than any other aspects. Rawland (1970) Stated Hand Ball requires that performer is able to run, jump, throw and catch all natural and specific skills.

Research findings show that a high level of Performance of techniques alone has vary little to do with competitive sports. Scientists have been of the view that in modern sports anthropometric measurement; physical fitness variables and their relationship with Psychological and Physiological abilities are important ingredients for good performance. All the above cited variables of an athlete have a lot to do with his/her performance. The sports skills and techniques of a player or team are helpful characteristics in achieving a bossier performance.
The peak performance is dependent on the level of tactical, technical, physiological and anthropometric aspect of the game or concerned. Studies have shown that champions in different sports differ in their anthropometric, psychological and physiological variables, which corresponds to some extent with particular requirement of their cooperative game. The scientists have observed that apart from these factors, the performance of sports person in games and sports are being influenced by various characteristics of physique, psychological traits and physiological function etc.

Women and Sports

For centuries men managed to propagate the fairy tale about the weak woman, thus keeping the sports arena mainly to themselves. Earlier, ethic-aesthetic arguments were employed, for instance, that sport destroys the natural charm of women that their place was in the home etc. All used to make sure that sports stayed or man privilege. Across the ocean, the common nineteenth century American opinion of women was expressed by a Colorade high school principal. I still believe that the spheres of women and men are not exactly the same, that if they were to fulfill the same functions. Almighty God, in his wisdom would have found same way of making them the same and that, if we make or attempt to make, men out of women, the latter with soon become what they are not, the weaker sex. I believe that it would be a misfortune, if any physical or mental education. We shall take the feminity out of women and neglect or extinguish that grandest, most sacred of all instincts, the instinct of motherhood, upon which not only the welfare but the very existence of the nation depends.

During the twentieth one century, woman’s sports have become an
integral part of international sports scene and unlike in ancient Greece. Women no longer have to compete in their separate Arenas. The growth of women sports can best be judged by the gradual but persistent expansion of the women’s events in the modern Olympic games. In these games, women today have their own competition in 15 to 20 different sports and competitions in cycling and shooting were added at Olympic games in Los Angles in 1984. In other events such as riding, yachting and shooting, women could and did compete with men have gained in Olympic medals within the last decade, female athletes do especially well in equestrian events and dressage is practically dominated by women.

Poul Robinson (1990) a Canadian Physical Educator, emphasized the point that society must accept strength women as being as intrinsic to feminity as it is to masculinity, Just as we accept kindness as much a part of the male role as it is of the female role”. He than went to give these practical guidelines for physical educators.

We must never give any girl the impression that anything she does physically is masculine or unfeminine, at any age physical activity should never be a threat to feminity but should be part of development of it. There is always a need to provide individual, stimulating strenuous activities by girls and women. It is as essential to feminity as it is to masculinity to have a physical orientation in terms of activity. It is truly a measure of substantial progress in human affairs to realize that a man could not have written those words 60 years ago without caustic criticism and emotional antagonism. Truly, a revaluation is well under in way in the USA, European and other countries, and the new generation of women experts to find self expression and the opportunity to show their
competitiveness in an unlimited number of sports, “Big” brother cannot longer expect little sister to sit on the side lines and watch him play.

Hence the present investigation is going to undertake study for better understanding for their psychology, physiology and anthropometric variable to help the women to achieve higher performance.

**Role of Psychology in Sports**

Sports performance of higher levels in versions games and sports are influenced by many factors such as physique, motor abilities, techniques, tactics psychological and physiological abilities. The ability of a person to perform in any game is obviously limited by his physical characteristics, but beyond these broad restriction psychological factors play a decisive role. Many coaches, trainers and physiologists believe that future records will be broken primarily because of increased attention to the psychological features of the personality more than the physiological and mechanical aspects.

Winning in international competitions highly depends upon psychological abilities. According to Schallander (1971). The winner of 4 gold medals in Tokyo Olympics “In Olympic Competition a race is won in mind ... winning 20 percent physical and 80 percent mental”. According to Krueger$^1$ (1984). The Soviets proved that with more psychological training the sports group achieved the best performances.

Morgan (1970) while emphasizing the important part played by sports psychology, states as training programme is and competitions become more intense and higher especially in case of super sports persons, the role of psychology becomes even more vital”. In the
modern competitive sports the sports persons are prepared not only to play the games but also to win the game, and for winning the games It is not only the proficient in the skills which bring victory but more important is the mental preparation, the spirit and attitude of the sport men with which they play and perform the best in the competition.

Psychology as behaviour science is becoming and getting a lot of popularity in competitive sports in these days throughout the world. Many psychologists are being employed to guide and help the trainers and coaches to deal with their players. Advance countries in sports like USA, USSR, UK, Germany and China etc. engage a psychologists with each team to train the team for higher level of competition, psychologists is an important member of the team of scientists, which include coach, physiologists, sports medicine exports etc. which prepare team for higher level competition.

Liewelly and Blucka (1982) observe that since 1976 Olympic games, several programmes for the psychological assessment and preparation of players have been undertaken and publicized in several European countries. Given these recent developments in sports, the author write “It is clear that coaches must be familiar with sports, psychology as they are with team strategies and techniques. Once the coaches understand the role of physiological variables of sports, than he must learn the role of psychology variables also. This knowledge certainty helps them in preparing and training their players more purpose fully and effectively. Literature on sports offers numerous examples of players, coaches and physical educationists applying principles of psychology to improve performance. Sports at all competitive level in sports arena becomes more of psychological phenomenon than the
physical one. The muscles move more on to the order of the brain. If brain is fatigued the muscles become excited. If the brain loses the muscles lose Psychology of sports provides information and guidelines which are helpful to the coaches and players.

Psychology not only helps in designing the suitable training programme for the sportsmen for developing the required psychological characteristics required to obtain optimum performance, but also suggests ways and means to overcome many problems of the players rotated to competitive situations such as conflict, depression, and presume anxiety stress and strain etc. Sports psychology is playing an important role in this direction, which made us to realize the relationship at different psychological factors with competitive performance. Keeping in view the requirement the investigator has taken the area of anxiety related to sports performance and adjustment in various game situations. These two has gradually become one of the major aspects of investigation to the investigator, who has taken female handball and basket ball players.

Anxiety

Sports psychologists and coaches have become increasingly aware of the detrimental role that high competition anxiety may play in sports performance. Uncontrolled emotions, excessive tensions produce mental confusion. This may become the cause of negative expectations about success in a competition. The ability to cope with pressure and anxiety is an integral part of sports, particularly among elite athletes. (Hardy Jones and Gould (1996) Orilick and Partington (1988). Many researchers have reported that over 50 consultations among athletes are related to stress or anxiety related problems. A great deal of research has been conducted
examining the relationship between anxiety and performances within the field of games of sports.

Most athletes enter a competition with some concern about their chances of winning. “When an athlete performance suffers in an important event, he is often too much worried about the outcome… being solely concerned with winning and it causes an increase in anxiety.

Anxiety has been defined as a negative aspects of experiencing stress. It is the worry that is experienced due to the fear of failure. Anxiety results when the individual doubts his or her ability to cope with the situation that causes him or her stress. The differences observed between successful and unsuccessful athletes may be the result of their cognitive interpretation of their anxiety states. According to reversal theory arousal is interpreted differently depending on their present state. In telic states athletes are focused on a goal and thus interpret their arousal as anxiety. However, in praelic states performers are focused on then behaviour and therefore interpret their arousal as excitement. Individuals can flip from one state to another quickly and therefore change their interpretation of the arousal that they experience which in return affects their performance. This theory attempts to incorporate both physiological and cognitive factors in its explanation of the relationship between performance and anxiety but fails to explain their relationship with performance adequately.

Simon, and Martens (1990) investigated the effect of anxiety on sports performance. Research as have found that competitive State Anxiety is higher for amateur athletes in individual sports compared with athletes in team sports. Infact the main problem that research on the
relationship between anxiety and performance in sports has encountered is that the researchers have not adequately operationally defined the construct of anxiety, instead, terms such as stress, anxiety, arousal and activation have used interchangeably. For the purposes of this investigation the following operational definitions will be used for the terms anxiety and stress. Stress is state that results form the demands that are placed on the individual which require that person to engage in some coping behaviour (Jones 1990).

Arousal can be considered to be a signal to the individual that he or she has entered a stressful state and is characterized by physiologists signs (Hardy et al. 1996) Anxiety results when the individual doubts his or her ability to cope with the situation that causes him or her stress. In all there is one point that needs to be clarified is the difference between state and trait anxiety Spielberger (1966) explains state anxiety can be considered to be more situational in nature and is often associated with arousal of the automatic nervous system, trait anxiety can be thought of as a world view that an Individual uses when coping with situations in his or her environment. Trait anxiety influences performance in this individuals with high trait anxiety will attend more to information related to state anxiety, within the contest of sports, those individuals who are low trait anxious and experience high. State anxiety would find it facilitative to a peak performance, but those individual with who are high trait anxious and experience state anxiety will find it debilitative to athletic performance.

Karnev, Joyce and Refold (1994) described that cognitive anxiety has been found to exert a powerful influence on performance. This
statement holds true regardless of the individual’s skill level, participants in a collegiate soft ball tournament were put into one of two conditions, high situation critically or low while somatic anxiety did not differ in two situations. Those athletes in the high critically condition had significantly higher levels of cognitive anxiety, clearly to cognitive interpretation an individual gives to a situation exert an effect.

*Gould,* Petrichikoft and Weinberg (1994) has reported that the strongest predictor of cognitive anxiety was years of experience such that the more experience an individual had the lower level of cognitive anxiety. This was supported by research conducted with a group of tennis players. Advanced subjects (individuals who had been participating in the sports competition extended period of time) reported more facilitative interpretations of their anxiety than novices. Similar results have been observed among a group of elite swimmers.

Clearly, anxiety exerts a variety of effects on sports performance. These effects are based on sport, gender and level of experience. In order to facilitate peak performance by athletes, sports psychologists must consider the three different facts of anxiety, cognitive, somatic and self confidence.

**Adjustment**

The problems of adjustment have become so vital in our complex and civilized society that psychologists have turned their deep interest in understanding it. Just as individuals may have different views on the nature of psychological adjustment, so also do psychologists. Some psychologists view adjustment as a process by which individuals are continually growing and meeting life challenges. Other psychologists view adjustment as a fixed state or goal that involves certain desirable
characteristics (such as satisfaction in social relationship, in marriage, in a career or goal achievement) that must be achieved.

Adjustment attempts to satisfy needs by overcoming both inner and outer obstacles and by adapting to circumstances learning about adjustment means analyzing two things, internal make up and internal personal or social behaviour. Adjustment is the dynamic process by which organisms meet their needs. Physical education related activities satisfy many of these needs.

The behaviour of human being is difficult to investigate because of the complexity of the subject matter. This complexity of human behaviour is best illustrated by the fact that adjustment process involves a number of basic and applied fields of knowledge, such as psychology, genetics, sociology, anthropometry medicine and exam religion. The achievement of desirable life adjustment is dependent upon the recognition of the significance of inherited potential and environmental conditions as these affect one’s life. Adjustment may be referred to as the continuous process of maintaining harmony among the attributes of individual and the environmental conditions, which surround him or her. The individual potentials and characteristics are in born but are also modified through experiences. The effective adjustment will involve both personal and social criteria and value judgements.

The concept of adjustment is originally biological as propounded in Darwin theory of natural selection and adaptation. The concept of adaptation was borrowed by psychology and named as adjustment. According to Webster’s ninth collegiate dictionary (1967) adjustment is “to adapt or conform on self (as to climate, food or new working hours) or to achieve mental and behavioural balance between one’s own needs...
and demands of other. In other dictionaries adjustment is a mean to fit’’ to make correspondent, to adopt or to accommodates”. To a layman adjustment is the balanced mental satisfaction between needs and aspirations of an individual to the life situation or it was better interpersonal relationship between his needs and expectation.

Boering et al. (1980) defined adjustment as a process by which a living organism maintains balance between needs and circumstances that influence the satisfaction level of their needs.

Loyed (1981) “Adjustment is a continuous process of maintaining harmony among attributes of the individual and the environmental conditions which surround him.

A person may be failing in school or ironically poor performance may result regularly in loss or decreased in performance achievement. Such may be performed consistently but only a level for below his capabilities. He is some times unaware that he is functioning below and may have difficulty, in understanding why he is failing. Occupationally, In actuality, a reduced performance is often attribute to stress, which impair the ability of the athlete to perform upto his capacity. This can be cured by the process of psychological treatment. Improving educational adjustment by which athlete is able to cope with the failure in such and adjust in any social educational environment causes higher achievements.

The athlete whose mode of adjustment lends him to behave in a way, which may be dangerous to himself or to other and ultimately taken him to hospital or imprisoned by modern society. The person whose process of adjustment lead to behaviour that a public nuisance may be criticized or shunned at the very least. In other words some adjustment
are poor simply because family or society regards them as poor. They may be attributed to limits the scientific applicability of this criterion assessment of adjusting adequacy which flexibly improved by home and social adjustment. The process by which an athlete is able to keep pace with each and every changing situation in his/her family and able to cope with demand to achieve performance.

A well adjusted sports persons uses their skills and tactics to perform wisely on his environment. Excessive timidity aggressiveness or other fault of personality prevent him from making this contribution. Adjustment is a mean to and of accomplishment. Sperting Biddulph (1954) Krail and Carlon (1967) and Martin (1984) has reported a negative correlation between adjustment and achievements. But they found that an athlete can adjust well for higher performance by certain objectives. Security and confidence, improving one’s own adjustments, maintain good physical health and do satisfying work alongwith rest and recreation, participation in society have a confidential relationship with another person plan, and do something about every problem, be objective seek insight, don’t take any think seriously and most important they live in present.

**Role of Physiological Variables**

The total fitness is just one aspect of the study of exercise physiology. Other aspects concern the effects of exercise of performance and implementation of fitness programme. It is essential that coaches and players must have a thorough knowledge of the structure and function of the various systems concerned with physiological fitness. The heart and circulatory system which is referred to as the cardio vascular system are the key to physiological fitness. The key to this system’s well-being is
exercise. The cardiovascular system is the body’s vital transport system. It transports the necessary food materials and oxygen to the cells and serves as the garbage collector, removing waste products from the cells and transporting them to the elimination centers. The blood serves as a carrier through which materials are moved through the network of arteries, veins and capillaries. The force that keeps the system running is the heart. The heart is a pump vital is the efficient performance of all other systems in the body. The healthy heart cannot be injured with the exercise rather. It becomes highly resistant to strain.

The heart is not serviced by the blood flowing through. It to other parts of the body from arteries arising from the aorta. Drug are referred to as coronary arteries. The blood in aorta comes directly from the lungs rich in oxygen, the normal heart is adequately supplied with any generated plural. The rhythm of the normally functioning heart regulated by the accelerator and vague nerves from the sympathetic and Para sympathetic nervous systems respectively. The usual flow of blood through the coronary arteries is impeded somewhat by the contraction of the heart muscles and more blood flow during the relation phase. The more effective the heart become. This is a part of the rationale for low heart rate”, because such a condition would result in Longer relation period and there by promote more effective evaluation blood in the heart muscles.

**Cardiac Output** is the quantity of blood ejected from the left vertical of the heart into the aorta each minute. It is influenced by both heart rate and stroke volume. A slow heart rate and a large stroke values are desired out comes of a conditioning programme for the individual. In general the stroke volume will not increase once the heart rate reaches
120 beats per minute. In fact, beyond this rate, the stroke volume may decrease. The cardiac output is generally about five liters per minute. But during stress and strenuous exercise rapidly, and in highly trained athletes. This may rise to the value as high as 30 or perhaps even 40 liters per minute. The trained person of generally has a much lower heart rate than the untrained person may be as low as 50 to 60 beats per minute. The untrained person generally has a rate that varies between 80 to 90. A heart that has a resting rate of 60 beats per minute will get 18 more days rest per year than the heart that has a resting heart rate of 80.

There is an inextricable relationship between the heart and circulating system and the respiratory system. The respiratory system is an important link in the cycle of getting oxygen metro blood stream. It is believed that oxygen is the key to the efficient functioning of not only the heart and brain but all other systems of the body including the muscular system” (Cooper 1984).

To be alive is to process oxygen through the lungs, heart and circulatory system. Therefore the life-giving oxygen must be in the blood stream for body cells to maintain cellular integrity, but especially the nerve cells in the central nervous system and the muscle cells in the central nervous system and the muscle cells in the heart walls, because they can function only a few minutes without oxygen. Conversely the cells of the muscular system have a unique built in capacity where by they can function for a time through an oxygen debt.

In the world of sports, every participating individual and spectator generally, eye to the positioned athletes and they also become in the main lime-light in the field of sports. The coaches, trainer or selectors at various levels generally considered the performance in the trail and
qualifying competitions. Whereas the physical fitness and physiological basis, most of time as ignored variables. It has developed to such a high degree scientifically that no physical education teachers, coaches or player can afford to neglect the application of scientific training and principles. Melhotra (1981) Indicated that high competitive sports are called for supreme human efforts, that body is capable of or trained to perform, and in such efforts the heart beat is generally raised upto the level of 180 strokes per minute.

Budet (1982) stated that physiological parameters involved in oxygen transport were compared the men and women. Similar aerobic capacities or maximum oxygen up take during physical activities. If we divided cardiac output with body weight, hemoglobin concentration and body fat were assessed to detect differences that might exist due to sex on fitness level. The statistical analysis indicate that cardiac output increased with fitness level and was greater in men-cardiac output divided by body weight, showing increased in fitness level but shown no difference due to rest. Hemoglobin concentration gets greater in men but did not vary due to fitness level. Percent body fats was greater in women and decreased the fitness level.

Testerman (1985) conducted a study to examine training and determining effect on selected physiological measurement of fitness in adult black women. Pre post and detraining past measurements were made on body weight, heart rate, blood pressure (both) and some of skinfold (Supraclelic thigh and calf) and predicted vo2 max. The study was conducted in four stages and two training sessions. Training was given either by walking jogging or aerobic dancing 3 times per week over 11 to 12 weeks at 70-75%. He found that trainee adjusted maximum
in heart rate. On detraining period was for 10 weeks and second period to 15 weeks. Data analysed by factorial Anova. Predicted vo2 max was significant increased of the training was either maintained or reduced back to pre-training levels. Though determining skinfold thickness were significantly reduced following training and detraining either stabilized or ration to pertaining levels. Body weight heart rate and systolic and diastolic blood pressure underwent almost no changes trim training through the detraining period.

Not all of these factors which affect human performance are susceptible to easy measurement. In addition to these physiological, there are many other factors such as anthropometry psychological environmental and technical and tactise variable which affects the human performance.

The present study is consided with various physiological variables. So as to compile the physiological characteristics of Basket ball and Hand Ball players. The following physical great variables are taken:

1. Blood Pressure (Diastolic and Systotic)
2. Pulse rate
3. Respiratory Rate
4. Breath Holding

The physiological aspect of human being is to increase the ability of the body to get oxygen in sufficient quantities to the muscle cell. It can do so in several ways: by increasing the rate of breathing, by increasing the depth of breathing, by increasing of rate at which oxygen is taken from the air in lungs into the blood, by increasing the amount of hemoglobin available for oxygen transport, by increasing the rate of
blood flow and by increasing the rate at which oxygen is unloaded from the blood at the muscle cell.

The rate of breathing can be increased voluntarily but in vigorous exercise the increase is largely involuntary and is probably caused by the effect of increased blood lactate on the respiratory center. The mechanism probably also control the depth of breathing and all those depends on the strength of respiratory muscles. The physically fit person, have respiratory muscles which must be well developed to allow a maximum intake of air, the rate of which oxygen is taken into to blood from the lungs is determined by lung capacity. But in young adult it should be about 180 per minute. The rate of blood flow is increased by increasing the heart rate stroke volume one rate at which the heart is more efficient varies from individual to indented. The rate of which oxygen is unloaded at the cell depends on the partial pressures of oxygen in the blood and in the cell. These changes are reversible when training step. The efficient delivery of oxygen to muscle cells and their adequate supply of nutritive elements derived from food substances make it possible for them to make their adaptation to training.

**Anthropometry**

Anthropometry constitutes the earliest form of measurement in physical education, as one might surmise. Study of the human physique and its proportions began many centuries age. The early beginning can be traced from the remote civilization of India, where a treatise called “Silpi Sastri” analyzed the out-line of the body by dividing it in 480 parts. Anthropometry evolved in the quest to determine the ideal body proportions, artists and sculptors directed their study it is shown by the work in early civilizations.
Anthropometrical measurement for assessment of physical status was expanded quite naturally to include consideration of body types and relation to Physique to one’s health, immunity from disease. Postures, physical performance and personality qualities. Hippocrates first performance and personality qualities. Hippocrates first realized and classified human beings according to two basic physique. Long and thin or short and thick. Kretschmer, the father of modern body or Samato type, defined three types by adding an in between and referred to them as aesthetic (Lean) athletic and picnic (heavy).

Presently, anthropometry considered individual differences, appraises each subject relative to his structural differences and determines his potentialities in light of those structural characteristics. Measurements of the body, which include in size, weight, limb-length, width and circumference. These specific measurements of the segments reveal the relationship between anthropometry and performance. These body segments help the top athletes perform in aid require for the particular performance. Accordingly, the body segments have a significance place in the field of sports activities and incorrect body proportion may lead to bad performance. The physical fitness parameters such as speed, agility, flexibility stamina and endurance help a sports person to make size and shape of the body to perform high skill of the game. The parameters accommodate physical proportions and physical efficiencies.

The players of hand ball and font Basketball like other sports person also require type of physique and mental make up. The players of these games should have ecto-mesomorphic characteristics of the physique which can give the advantages to the player for making
shorting gave the and can score more basket. One of the mesomorphic characteristics is height of the players. Which should be 5.7” to 5.10 or 6” with weight between 70 to 85 kg along with body strength, when “dominate any kind of sports and execution of skills.

The most elementary principles of material are requires experiment to move quickly in Basket Ball or in Hand Ball ground playing a great variety of shooting, Dribbling and passing the ball etc. with variety of movements, i.e. first catching or Holding the Ball in a number of ways and than to link together these with stropping or of throwing and shooting actions with a series of body movements to maintain the good game and fast game. Generally maintain the good game fast game and to throwing, dibbling, passing actions requires in both the games to become a good, fast hand ball or basket ball players. The players must be fully trained in Back Passes under arm passing, over head passing or throwing during shooting the goal in Hand Ball and during & Putting the Basket received good running speed and balance producing good striking techniques and fast movement in the playing area or grounds hand ball and basket ball court.

Human performance is a combination of many variables and one of them is the structure of the body. Mostly ladies are not as strong as the man, therefore, less able to produce manner, generally the ladies striking, shorting and throwing techniques require for more attention than those of the men who can over come some of their deficiencies with brute strength.

All of those factors are age related, what is perfect form far less tall, well built motivated and dedicated junior players may prove inadequate as they mature in to adult hood. This is particularly so far
young lady with the dramatic anatomical changes which occur as they enter womanhood. As younger players mature coaches may need to consider and introduce slightly different techniques, which take these changes into account.

All in all it can be said that in light of the fast growing realization of the imbalances of these games and its contribution to the well being and fitness of human in general performance, in total sports and for further development of participants especially physiological variables, psychological components and anthropometric traits related to hand ball and basket ball games. It is in the right of the spirit to take up the study concerning relation with these variables.

The history of measurement in physical education is less than 135 years old. Dr. Edward Hitch Cock measured height, weight, girths, breadths, vital capacity and some strength variables of physical education students to evaluate progress and gain to health. To the work of Hitch Cock was added that of DA Sargent, who started a measurement programme at Harvard University, USA (1878) and published a manual on measurement and testing.

All early leaders in physical education belonged to the field of Medicine and human biology who believed that proper exercise is a form of preventive medicine [Barren and McGee, 1971] Clark and Clark (1967). In the recent years, the selection and development of talent in sports have been gaining greater emphasis of course, it involve integral approached of different sports sciences specialists. However, the role of anthropometry as a sports science is perhaps one of the most crucial aspects in this regards. It is essential because the physique, body composition physical growth are of fundamental importance in
developing the criteria of talent selection and development in sports (Sodhi, 1991).

**Justification of the Problem**

In India, even after 60 years, we still believe in the traditional method of training, which did not apply for the development of sports, for instance, still continue to believe that a person with heavy body can be a good wrestler and a good thrower, a person with stump structure can be a good runner or a good valley ball player, contrary, the other leading contest recognizes the roll of scientific training in a long back. It is neither possible nor feasible to excel at the international level without proper involvement of the sports scientists and method of scientific training. Only after 1982, when government of India hosted Asian games at New Delhi. It was believed that sports not only contributes to the individual performance, individual glory but certainly a factor which involves prestige of nation, and only in 1982, Asian games, government of India gave importance to the sports infrastructure and made sports an item on the national agenda and accordingly the sports body of the nation started preparing long term development programme in consultation with the Indian Olympic association and sports Authority of India. Though we have started preparing our sports persons between the period from games to the next games like Asian and Olympic, but these efforts and policies did not bring fruitful results because of not using scientific angles in training and I have no hesitation in stating that sports in our country is still a for cry. We are working on trail and error methods, which may not bring good results In the absence of scientific knowledge of the subject, The high level of performance can be achieved only with high efforts which includes sports persons (Players), coaches, trainers, doctors,
psychologists and scientists of the elide area and we have to stream line the training method.

Sports persons have to pass through various stages to come up to the highest level of competitions. He or she has to excel to make himself/herself eligible for a high level of competition. The judgment of improvement in performance is not always objective means an individual performing better than his/her opponent dual or individual sports. To meet this requirement the trainers, coaches and sports persons need to evolve some methods, which may make the task easier and free form subjectivity. Though a person can be well educated in the traditional training methods. The experience coaches or trainers can provide the evolving scientific criteria for training, which may be helpful to change the motor behaviour and human capabilities. It is also important to understand the role of different sportive factors that influence performance in combination and individually. Performance is intimately linked with scientific based training curriculum and all such factors connected with physical performance of the human bring.

In modern day sports, it is well said that in sports suitable persons should be selected for a suitable event for the sports language it is important that a suitable talent is selected for a suitable sports. The purpose of this study is also related to observe the potentialities of the female Hand Ball and Basket Ball players through the psychological, physiological and selected anthropometric measurement, and their comparison, as these factors are more considered to find out the talent for these games and without the identification of talent. It is impossible to achieve the desired goal. So the purpose of the present study will further reveal that the right physical parameters, physiological variables
and psychological variables along with fundamental related to Hand Ball and Basket Ball games. There is a great need to give the knowledge to our coaches, physical educationist and trainers about these particular characteristics to improve these games in India.

The results of the study would add something new to the existing literature by clarifying the nature of relationship between these variables with these games.

The investigator herself a trained physical educationists and national level players of Hand Ball and Basket Ball would utilize the results, by developing suitable training programme based on these variables to obtain maximum performance and to confirm the results.

**Statement of the Problem**

The investigator has planned to find out the effects of physiological, psychological and anthropometric variables and their comparison between the women Hand Ball and Basket Ball players. So the specifically stated problem of this investigation is as under:

“Comparative study of Selected Anthropometric Psychological and Physiological Variables Between Women Hand Ball and Basket Ball Players”.

**Objectives of the Study**

To find out and compare the selected anthropometric variable between women Hand Ball and Basket Ball Players.

To determine the psychological variables such as Anxiety and Adjustment level between women Handball and Basket Ball players at State,Inter college/University level participation.

To determine the significant differences such as Blood Pressure,
Pulse rate and Lung Capacity between Women Hand Ball and Basket Ball Players.

**Hypothesis**

The present study is based on the following hypothesis.

There exists significant differences in selected anthropometric variables between women Hand Ball and Basket Ball Players.

There exists significant differences in Psychological variable such as Anxiety and Adjustment level among Women Hand Ball and Basket Ball Players.

There will be significant differences in Physiological variables such as Blood pressure, Pulse rate and Lung capacity among Women Hand Ball & Basket Ball Players.

**Significant of the Study**

It is presumed that the results of this study would serve the following purposes in the games of Hand Ball and Basket Ball and in the field of Physical education and sports.

1. The results obtained from the research work would have some important implication for Physical education teachers, coaches, administrators and other officials who are working specially in the field of these games, involving effective and scientific criteria for the selection of Hand Ball and Basket Ball Players of both sex to have maximum performance.

2. The study will be useful for bringing about psychological behaviour with development of psychological training, physiological variables and anthropometric variables of an individual players.

3. The results of the study will also help to understand the change in
playing activity with the change in level of performance of these games at junior/senior levels.

4. Performance in skill execution for both the games and elite players would be known.

5. The nature of anthropometric measurements along with physiological and physiological variables of Hand Ball and Basket Ball players at University level and will help the trained coaches to select the talent as per their requirement and help to prepare their carding programme.

6. The study will provide criteria for the selection of the talented women hand ball and basket ball players and also motivate others to take up similar studies on the other games to make our sports field to become more and more scientific and result oriented.

7. This study will act as information for future investigation in the area would be available for the researchers and results will also help the coaches to prepare their coaching programmers.

**Delimitations**

The present study was delimited to the following conditions:

1. The players of Hand Ball and Basket Ball (Women) who are the sample of this study were taken on the purposive sampling basis from the universities of Haryana, Punjab, Chandigarh and their affiliated colleges. All the players of these games have played upto inter college, inter coaching centres and state level championship being a bonafied board out of a state of India.

2. The study was delimited to 200 women (100 women Handball and 100 women Basket Ball players in the age group of 17 to 24 years.
3. The study was delimited to selected anthropometric variables such as linear, girth, diameter and skin fold. The study is delimited to only two psychological variables such as anxiety and adjustment level amongs the Hand Ball and Basket Ball players.

4. The study was also delimited to physiological variables and such as Blood Pressure, Pulse rate, Respiratory Rate and Breath Holding amongs the women Hand Ball and Basket Ball Players.

Limitation

The present study was conducted with the following limitations:

1. Number of subjects for each group was not a adequately large. This was because the number of active Basket Ball and Hand Ball Players with in the jurisdiction of Haryana,Punjab chandigarh Universities as the formation of the teams for intercollege, intervarsity, state level with a limited number of players.International level of participation were not considered for this study.

2. It was not possible to collect data for all the subjects in all the parameters (anthropometric, psychological and physiological. On the same day, so the data were collected from one center/college) from two to three day in the one center of the game) Where inter college, intervarsity and state championship were held.

The variation in weather conditions though not very much, was a limiting factor. Non availability of highly sensitive scientific equipments and finance was also a limiting factor.
Psychological factors, diet, sleep, social environment economic conditions and life style of the subject could not be controlled during the collection of the data, hence those were also accepted as limitation.

The influence of above factors on the anthropometric measurements and physiological variables could not be controlled and assessed. Hence, these were also considered as limitation of the study.

**Definition of the Terms Used**

A term has different meaning according to its place of reference. It is essential to know the term for the investigator which is used repeatedly during the course of study. Some of the terms frequently used in this investigation are defined here.

**Anthropometry:**

Consists of making external measurement of human body and the relation of these external measurements can be used up rise of the body built, nutritional status and postures, Meyers, 1974.

Donald (1974) Anthropometric variables are the dimensions of the structure of human body taken at specific sites to give measure of length, width and girth.

**Physiological variables**

It is aspect of human being is to increase the ability of the body to got oxygen is sufficient quantities to the muscle cell by increasing the rate of breathing, and depth of breathing. It is also exist the rate at which oxygen is taken from the air in the lungs into blood, oxygen transport while increasing of hemoglobin and rate of blood flow and by the rate of oxygen is unloaded from the blood at the muscle cell.

**Psychological variables:**

The factors preventing individual from the exerting their maximum
strength or working to the absolute limits of their full capacity (Endurance) but facing discomfort and pain are quite obvious reasons but there are some situations, where they are not involved still the individual cannot extract the reserve energy present unless other circumstances intervenes.

**Basket Ball**

As per norms, the basket ball is a games as well as sports. It can be played out door and indoors on Pacca Floor cemented as well as wooden. The Basket Ball game is composed of 12 players and the objective of Basket Ball is to score Maximum Basket. All over Fundamentals are used to help players get an opportunity to score in the opponent basket. The game of basket ball has got various fundamental skills like Player stance, ball handling, passing, dribbling, shooting, rebounding pivoting tackling individual defense and scoring.

**Hand Ball**

Hand Ball is a game played between the two teams having seven players each side. Playing grow measuring 40 mts x 20 mts in length and width as per rules the players carry, dribble and throw the ball with hands only. The team who score more goals than the opponents become victorious. The duration of the game as 25 minutes each half with 10 minutes interval.

**University Level**

This refers to participation level of hand ball & Basket-Ball players. Here this means the women players who have taken part in hand ball & Basket-Ball games at inter college, and state level.
Comparative

It is a comparison between women hand ball and Basket ball players, who have participated in these games at University/ State/ Level belongs to Haryana, Punjab, Chandigarh State and distt.

Players

Many experts and investigators have used the term to athlete or sports persons (Players) According to Alderman (1984) a common sense or intuitive approach to defining term players, athletes or any person who engages in competitive sports. The definition has been accepted operationally for the purpose of this study as sports women, which have been taken as subjects are handball and basket ball players and players competitive these games and less than state, inter and college level competitions.

Blood Pressure:

The force (energy) which blood is pushed against to walls of blood vessels and circulated throughout the body when heart contracts. There are two types of blood pressure systematic and diastolic, have been considered for this study.

Pulse Rate: It is frequency of pressure waves per minute propagated along the arteries such as carotid or cardinal arteries per minutes.

Respiratory Rate: The over-all exchange of oxygen and carbon dioxide between the atmosphere, blood, lungs and cells during one minute.

Breath Holding Capacity: It is defined as the duration of holding breath after a full inspiration till expiration impulse over take.

Adjustment: The process of changing activities or environment to satisfy needs, the changes which is individuals undergoes in order to fit
environment, conditions. It is usually refer to change inhabits or behaviour which must be made by individual with some deviation or conflict is association, with others according to Lazarus 1936 psychological process by means of which individual manage to cope with various demands and process of life.

**Anxiety**

Anxiety has been defined as the negative aspect of experiencing stress. It is the worry that is experienced due to the fear of failure. Most athletes enter a competition with some concern about their chance of winning when an athlete's performance suffers in an important event, he is often too much worried about the outcome… being solely concerned with winning and it causes an increased in anxiety Orlick and Pantington (1988).