CHAPTER - I

INTRODUCTION

Sport serves vital and important role in social and cultural functioning for each individual. In the last few decades sports have gained tremendous popularity all over the globe. The popularity of sports is still increasing at a fast pace and this happy trend is likely to continue in the future also. The contribution of sports towards the overall welfare of the human society may be capsule in the following points:

a) Sports help in the all-around development of human personality.

b) Provide ample and healthy means for recreation and relaxation of human mind and body.

c) Are effective for rehabilitation and social adjustment to the injured, sick and handicapped.

d) Provide opportunities for social interaction thereby fostering peace and understanding among different people, nations, races, religion etc.

e) Perform preventive and curative functions for several diseases and ailments inflicting human body and mind.

f) Provide healthy and socially acceptable opportunities for the people and nations to compete against each other thereby touching heights to excellence of human endeavor and attainment.
Barrow and Gee (1999) acknowledged that the physical fitness is a complex phenomenon consisting of various factors such as speed, strength, flexibility agility, cardiovascular endurance etc.

Jenson and Fisher (1999) clarified as physical traits are considered as important parameters for athletes (Sprinter) such strength, power, speed, agility, coordination, muscular endurance, reaction time, cardiovascular respiratory endurance and flexibility. Since speed, agility, power, co-ordination and reaction time are specific motor traits. These traits are best developed by the repeated practice of the different trainings for which they are needed. The strength, speed, agility co-ordination, power, flexibility contribute to these motor traits.

Strength is a helping element to several performance traits as it contributes to power (Power = Force x Velocity). The increased strength results in the ability to apply more force and thereby it contributes to power; strength is also a factor in muscular endurance, which is the ability of the muscles to resist fatigue whole doing work.

force is required to accelerate the body and its parts rapidly. Also, strength is a factor in running speed because force is required to accelerate the body and keep it in motion at top speed. There is no doubt that lack of sufficient strength is a serious handicap too many would be good players.

Among the most universal and most engrossing of all human pursuits is the attempt to understand the human being. Philosophers, political scientists, sociologists, anthropologists, biologists, physiologists, psychologists- all study man and cast into print the results of their observations. The butcher, baker, and the candlestick maker- all study man, albeit in a casual way, and use the results of their
study as a basis for conducting their daily lives. Each of us, in his own way, has studies human beings. And each of us has developed his own view of man.

Psychology deals with all phases of the psychological process, which may be viewed against some perspectives and may consider the general nature of the scientific approach to the study of psychological phenomena. The several studies indicated the following out-comes of their studies:

1. The organism grows and develops over time; the nature and sequences of development help determine the nature and sequences of behavior seen in the psychological process.

2. The human infant has a biological history, a biological and psychological future.

3. On the historical side, the human infant has an evolutionary heredity, a species heredity, and an individual heredity- all represented in the pattern of his genes and chromosomes.

4. His heredity gives the human individual not only a similarity to other organisms but also uniqueness.

5. More than other kind of organism, the human neonate is relatively dependent and his behavior relatively free of instinctual determination.

6. The individual inherits physical traits, capacities, and susceptibilities; and his inherited characteristics have both direct and indirect effects on his behavior.
7. There is evidence that an organism’s genetic background may contribute to its capacity to learn; and the human capacity to behave intelligently has a hereditary component.

8. The possibility exists that in some families there may be an inherited susceptibility to schizophrenia.

9. Hereditary and environmental factors interact in many ways to produce the patterns of adjustment we observe.

10. Emotional experiences on the part of mother rats during pregnancy produce emotionally in the offspring.

11. The development of the organism follows a cephalocaudal sequence, a proximal-distal sequence, and sequences of differentiation and integration.

12. There are normal sequence with respect to motor development, language development, and emotional development. All individuals, at least in Western cultures, follow similar sequences; but each develops at his own rate.

13. The functioning of the ductless glands—especially the pituitary, the thyroid, the adrenals, and the gonads— influences significantly the growth of the individual.

14. Learning of certain tasks and skills cannot occur until maturation has redirected the organism; the stage of maturation determines what the organism can learn.
15. Early sensory and perceptual experience, or the lack of it, has a bearing on mature sensory and perceptual abilities.

16. Early physical experiences, such as handling or isolation or stress, have definite effects on the later behavior of animals.

17. There is evidence, though somewhat controversial, that infants deprived of early love and attention show severe personality disturbances.

18. The timing and nature of early child-parent relationship can affect development; at certain critical periods young animals tend to become imprinted on large moving objects, tending to follow these objects about as if there were mothers.

19. Research on the effect of artificial experimental mothers suggests importance of the feel of the mother in the developing attachment to her; infant monkeys with “wire mothers” behave quite differently from these with “cloth mothers.”

Now a day, there has been an ever increasing focus on attention on the study of individual differences in research. In this regard a large number of researchers are engaged in comparing the motor performance of different sections of population in terms of race or otherwise various regional backgrounds. The net results of their finding have been contradictory and there is no unanimity among the research scholars regarding inter-relationship between or the degree of influence.

So far, the selection of potential outstanding sportsmen for social sports has mainly been done in most states/countries by intention or in other words left to the good eye of the concerned physical education teacher or coach. We know from the facts that the ultimate performance of the mature athlete is determined by a large
number of factors, such as genetic, nutritional status, climate, sociological and psychological, as well as type of cultural activity and training to which the individual is exposed (Yiglety, 2001).

To develop the motor components of the athletes, training is an essential aspect. The present study was considered with selected training programme so as to compile the physiological characteristics of Kho-Kho players selected from various schools of Delhi. The following trainings were adopted for improvement of motor abilities:

a) Circuit training
b) Fartlek training
c) Sprint and strides
d) Shuttle Run
e) Jig-jag Running

force is required to accelerate the body and its parts rapidly. Also, strength is a factor in running speed because force is required to accelerate the body and keep it in motion at top speed. There is no doubt that lack of sufficient strength is a serious handicap too many would be good players.

Among the most universal and most engrossing of all human pursuits is the attempt to understand the human being. Philosophers, political scientists, sociologists, anthropologists, biologists, physiologists, psychologists- all study man and cast into print the results of their observations. The butcher, baker, and the candlestick maker- all study man, albeit in a casual way, and use the results of their
study as a basis for conducting their daily lives. Each of us, in his own way, has studies human beings. And each of us has developed his own view of man.

Psychology deals with all phases of the psychological process, which may be viewed against some perspectives and may consider the general nature of the scientific approach to the study of psychological phenomena. The several studies indicated the following out-comes of their studies:

20. The organism grows and develops over time; the nature and sequences of development help determine the nature and sequences of behavior seen in the psychological process.

21. The human infant has a biological history, a biological and psychological future.

22. On the historical side, the human infant has an evolutionary heredity, a species heredity, and an individual heredity-all represented in the pattern of his genes and chromosomes.

23. His heredity gives the human individual not only a similarity to other organisms but also uniqueness.

24. More than other kind of organism, the human neonate is relatively dependent and his behavior relatively free of instinctual determination.

25. The individual inherits physical traits, capacities, and susceptibilities; and his inherited charactertics have both direct and indirect effects on his behavior.
26. There is evidence that an organism’s genetic background may contribute to its capacity to learn; and the human capacity to behave intelligently has a hereditary component.

27. The possibility exists that in some families there may be an inherited susceptibility to schizophrenia.

28. Hereditary and environmental factors interact in many ways to produce the patterns of adjustment we observe.

29. Emotional experiences on the part of mother rats during pregnancy produce emotionally in the offspring.

30. The development of the organism follows a cephalocaudal sequence, a proximal-distal sequence, and sequences of differentiation and integration.

31. There are normal sequence with respect to motor development, language development, and emotional development. All individuals, at least in Western cultures, follow similar sequences; but each develops at his own rate.

32. The functioning of the ductless glands—especially the pituitary, the thyroid, the adrenals, and the gonads— influences significantly the growth of the individual.

33. Learning of certain tasks and skills cannot occur until maturation has redirected the organism; the stage of maturation determines what the organism can learn.
34. Early sensory and perceptual experience, or the lack of it, has a bearing on mature sensory and perceptual abilities.

35. Early physical experiences, such as handling or isolation or stress, have definite effects on the later behavior of animals.

36. There is evidence, though somewhat controversial, that infants deprived of early love and attention show severe personality disturbances.

37. The timing and nature of early child-parent relationship can affect development; at certain critical periods young animals tend to become imprinted on large moving objects, tending to follow these objects about as if there were mothers.

38. Research on the effect of artificial experimental mothers suggests importance of the feel of the mother in the developing attachment to her; infant monkeys with “wire mothers” behave quite differently from those with ‘cloth mothers.”

So far, the selection of potential outstanding sportsmen for social sports has mainly been done in most states/countries by intention or in other words left to the good eye of the concerned physical education teacher or coach. Yiglety (2001) We know from the facts that the ultimate performance of the mature athlete is determined by a large number of factors, such as genetic, nutritional status, climate, sociological and psychological, as well as type of cultural activity and training to which the individual is exposed.

To develop the motor components of the athletes, training is an essential aspect. The present study was considered with selected training programme so as to
compile the physiological characteristics of Kho-Kho players selected from various schools of Delhi. The following trainings were adopted for improvement of motor abilities:

(a) Circuit training  
(b) Fartlek training  
(c) Sprint and strides  
(d) Shuttle Run  
(e) Jig-jag Running

Physical fitness is an attribute required for service in virtually all military forces. Physical fitness comprises two related concepts: general fitness (a state of health and well-being) and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through exercise, correct nutrition and enough rest. It is an important part of life. In previous years, fitness was commonly defined as the capacity to carry out the day’s activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient.

These days, physical fitness is considered a measure of the body’s ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo-kinetic diseases, and to meet emergency situations. Physical fitness’ is the capacity to do prolong hard work and recover to the same state of health in short duration of time. This is the result of the degree of strength, speed endurance, agility, power and flexibility one possesses. These elements of physical fitness are useful for different games and sports. Physical fitness depends on several factors
such as heredity, hygienic living, nutrition and body maneuvers of an individual. Amongst these, body maneuvers ever play an important role.

Different games provided to do the body activities, differently. Kabaddi and Kho-Kho players are equally conductive to developing these skills amongst players. The theory of coordinative abilities is though it is rapidly getting recognition in the world of sports. However, there is no general agreement regarding the number of coordinative abilities required for sports.

Components of Physical Fitness:

The President's Council on Physical Fitness and Sports—a study group sponsored by the government of the United States—declines to offer a simple definition of physical fitness. Instead, it developed the following chart:(http://en.wikipedia.org/wiki/Motor_coordination)

<table>
<thead>
<tr>
<th>Physiological Components</th>
<th>Health Related Components</th>
<th>Skill Related Components</th>
<th>Sports Related Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Metabolic</td>
<td>• Body Composition</td>
<td>• Agility</td>
<td>• Team Sport</td>
</tr>
<tr>
<td>• Morphological</td>
<td>• Cardiovascular Fitness</td>
<td>• Balance</td>
<td>• Individual Sport</td>
</tr>
<tr>
<td>• Bone Integrity</td>
<td>• Flexibility</td>
<td>• Coordination</td>
<td>• Life-time</td>
</tr>
<tr>
<td>• Other</td>
<td>• Muscular Endurance</td>
<td>• Power</td>
<td>• Other</td>
</tr>
<tr>
<td></td>
<td>• Muscle Strength</td>
<td>• Speed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reaction Time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Other</td>
<td></td>
</tr>
</tbody>
</table>
Accordingly, a general purpose of the physical fitness programme must address to the following essential and core nature of components:

- Cardiovascular Endurance
- Flexibility Score
- Strength
- Muscular Endurance (Stamina)
- Body Composition
- General Skill Ability

However, along with these essential components, a comprehensive fitness program that is tailored to an individual will probably focus on one or more specific skills, and on age or health-related needs such as bone health. Many sources also cite mental, social and emotional health as an important part of overall fitness. This is often presented in textbooks as a triangle made up of three points, which represent physical, emotional, and mental fitness. Physical fitness can also prevent or treat many chronic health conditions brought on by unhealthy lifestyle or aging. Working out can also help people sleep better. To stay healthy it's important to participate in physical activity.

Specific fitness- Specific or task-oriented fitness is a person's ability to perform in a specific activity with a reasonable efficiency as a sports, or military services. A specific training prepares athletes to perform well in their sports competition. The following are few of the examples to understand the concept:
- 400 m sprint: in a sprint the athlete must be trained to work aerobically throughout the race.
- Marathon: in this case the athlete must be trained to work aerobically and their endurance must be built-up to a maximum.
- Many fire fighters and police officers undergo regular fitness testing to determine if they are capable of the physically demanding tasks required of the job.

Members of the United States Army and Army National Guard must be able to pass the Army Physical Fitness Test (APFT).

Since, every sport has different type of energy requirement depending on the nature and duration of the activity, so it is vitally important to develop the reservoir of energy sources accordingly. Kumari (2007) It has been established beyond doubt, “Much of the human physiology is controlled by human physical fitness and that physiological preparation in sport is consequential in the absence of study human performance as it is related to competitive sport. Physical fitness is the result of regular physical activity, proper diet and nutrition, and proper rest for physical within the parameters allowed by the genome.

It usually happens frequently that teams, as well as individual player, don’t produce the performance in a much which would normally be expected of them, despite their excellent physical conditions. Experience has also frequently shown that team or players, that are considered rather weak, may play above themselves & are capable of producing outstanding performance. The reasons for this lie in the realm of Psychology. The good Coach knows that the team’s or the player’s ability does not depend merely on physical, technical & tactical qualities, but also on
Psychological consideration influencing these, so as to benefit performance, is one of the many important tasks that the coach has to master. Narang (2003).

The physiology is a branch of biology concerned with the function of the body. (Thibodeau et. al. 1993) Physiology is the science that treats the functions of the living organism and its parts. The term “Physiology” is a combination of two Greek words Physics means “Nature” and Logos means “Science of Study”. Simply stated, it is the study of physiology that helps to understand how the body works.

Moran (1996) Sports psychology, the youngest of the sport science, is concerned with the psychological effect derived from participation. Today many outlets & Coaches look to sport psychology for a competitive edge by seeking psychological training Programme in order to learn among other thing, way to manage, competitive stress, central concentration, improve confidence & increase communication skill & team harmony. Competitive sports provides psychologist with many fascinating opportunities to explore the success with which people can control their own mental processes in the face of adversity. If paying attention is viewed as an effort to exert control over what we perceive & do, then the study of concentration in athletes offers a potentially fruitful new avenue for the study of how the mind works.

**Statement of the Problem**

The present study was of the comparative nature of research work. The statement of problem was formally sated as: **A COMPARATIVE STUDY ON SELECTED PSYCHO-PHYSICAL FITNESS COMPONENTS OF KABADDI AND KHO-KHO PLAYERS OF DELHI SCHOOLS.**
Objectives of the Study:

The main objective of the present study is to find-out the difference between Kabaddi and Kho-Kho players at senior secondary school level in regards to their psycho-physical variables. The main purpose is more elaborately defended as the flowing sub-objectives:

- To find-out the different between physical fitness components of Kabaddi and Kho-Kho players such as speed, explosive strength, cardiovascular endurance, coordinative ability, and flexibility.
- To find-out the difference between the Kabaddi and Kho-Kho in sports competition anxiety, concentration level and psychomotor ability.

Hypotheses of the Study:

After going through the review of the related literature, the investigator was of the opinion to apply null hypothesis for the present investigation. This was done due to very less review found in this area and moreover, the related literature was not able to decide any directional hypothesis. The null hypothesis set and stated as below:

1. There will be no significant difference in physical fitness factors of Kabaddi players and Kho-Kho players.
2. There will be no significant difference in psychological factors of Kabaddi and Kho-Kho players.
Delimitations of the Study:

The present study was the following delimitations:

- The study was delimited to purposively select 100 male subjects age ranging from 16 to 19 years of Delhi schools, who has participated in Inter-Zonal and School National (SGFI) Junior National of Kabaddi and Kho-Kho competition.
- The study was further delimited out of 100 male players’ at schools levels a total of 50 male players of Kabaddi and 50 male Kho-Kho players were selected.
- The investigation was delimited to selected variables such as physical and psychological parameters as under:-

1. Anthropometric Components:
   a. Height
   b. Body weight
   c. Body Mass Index (BMI)

2. Physical Fitness Components:
   a. **Speed**: 40 m. Sprint
   b. **Explosive Strength**: Standing Broad Jump
   c. **Cardiovascular Endurance**: 12 min. Run/Walk Test
   d. **Coordinative Ability**: 4X10 m. Shuttle Run
   e. **Flexibility**: Sit and Reach Test

3. Psychological Components:

The Psychological abilities measure with selected tests as under-

   a. **Psycho-motor Ability**: Eye-hand Coordination Test
   b. **Concentration**: Grid Concentration Test
   c. **Sports Competition Anxiety Test** (SCAT)
Limitations of the Study:

The research scholar has anticipated few limitations for the present study. The findings of the study may be understood by considering the following limitations during the study faced by the scholar:

1. Availability of small number of sample size was one of the limitations of the study.
2. Sophisticated testing equipment for exercises was also one of the limitations for the present study.
3. Individual differences among the subjects and other factors such as- Life Style, dietary habits, daily routine, were also considered limitations for the present study.
4. Social stigma /religion, culture and social practices of the subjects in study may also be considered as Limitation for the Study.

Definitions and Explanations of the Terms Used:

Physical Fitness:

Clarke defined, ‘Physical Fitness’ as ‘the ability of carry-out daily task with vigor and alertness without undue fatigue and with ample energy to enjoy leisure time pursuits to meet unforeseen emergencies’. The American Association for Health, Physical Education, and Recreation defines total fitness as: .... that state which characterizes the degree to which the person is able to function.

Psychological Fitness- It refers to controlling the mental factors or abilities to optimal use of psychological aspects/factors of sports performance in sports competition.
**Concentration**- It is the ability to concentrate or focused on an object or assigned work for the required length of duration.

**Sports Competition Anxiety**: The sports competition anxiety considers as the interaction between the personality/individual differences in tendency to become anxious along with varied situational factor in competitive sports.

**Coordinative Ability**: Coordinative ability is the ability of the body to maintain the balance of the body of coordinated movements of the different body parts. To judge the differentiation ability and to perform a particular movement with less efforts and least expenditure of the energy of the body, stores in muscles and liver.

Coordinative ability is understood as relatively stabilized and generalized patterns of motor control and regulation process. These enable the sportsman to do a group of movements with better quality and effect”.

**Speed**: It is the ability to cover the assigned distance in minimum possible time. It is the performance pre-requisite to do motor actions under given conditions (movement task, external factors, individual pre-requisite) in minimum of time.

It defines the capacity of moving a limb or part of the body’s lever system or the whole body with greatest possible velocity without or with loading- i.e. velocity of discuss arm with or without discuss. But improvement in speed of arm may not improve performance till achieve synchronized movement.

**Strength**- It is the ability to act against the resistance. “Strength is the ability to overcome resistance or to act against the resistance” or “Strength, or the ability to
express force, is a basic physical characteristic that determine performance efficiency in sport”.

**Endurance:** It defined as it is ability to perform in presence of fatigue or tiredness or “Ability to resist fatigue”. Harre (1986) defined it, “As to the resistance ability to fatigue”. Thiess & Schnabel (1987) “Ability to do sports movements with the desired quality and speed under conditions of fatigue”.

**Flexibility**- It is a range or amplitude of the moment at a specific joint of body parts. It is related with quality of muscles, tendons and ligaments at particular joint.

**Significance of the Study:**

The findings of the study may have the following significance and contribution to the related field. The findings of the study have the significance of self-assessment of physical fitness abilities factors and psychological aspects of Kabaddi and Kho-Kho players:

1. The study seeks to bring-out the significance through the comparison of these factors between the of Kabaddi and Kho-Kho players.
2. The study has the significance of making of training schedule for the players, coaches, trainers and physical education teachers for Kabaddi and Kho-Kho players to develop psycho-physical fitness of sportsman.
3. The study contrary to above has the significance to select the of Kabaddi and Kho-Kho players on the basis of the evolution of psycho-physical fitness abilities factors as proceeded by the individuals.
4. The present study has also the significance of proposing guideline and index for future researchers in the field of Kabaddi and Kho-Kho.