This section gives a brief overview and provides a context for the study. This chapter introduces the research questions and provides a review of the literature concerning, “An Analytical Study of Motor Fitness Components, Anthropometric Characteristics and Motor Educability among Foil, Sabre and Epee Fencers”. The chapter is organized in sections covering:

i. Statement of the problem

ii. Objectives of the study

iii. Hypothesis of the study

iv. Delimitations of the study

v. Limitations of the study

vi. Definition and explanation of the terms

vii. Significance of the study
BACKGROUND OF THE STUDY

Fencing is a traditional sports item with a long history from a deadly combat to a complete sport. As early as in ancient times, the sword is the tool used by the human to fight with wild beasts and predate in order to survive. With the development of human history, the sword has developed from the original stone sword, bone sword to bronze sword and iron sword and its function has also evolved from initial tools into weapons used in war and gradually walked to the stage of history, but it gradually receded from the history of war accompanying the arrival of firearm era. The popularity of typography enables the heritage of civilization and fencing culture also wins development and improvement.

Since the time evolution of civilization coincides with the evolvement of fencing running through the days of Egyptian and Roman times to spruced elegance. Down the ages dating back to the barbaric Dark Ages Fencing sprit had always been regarded as an ask form representing power and glory. It how become as intrinsic part of life in every aspect from dueling to the captivating movies and facets of popular culture. Fencing as sport originates form the practice of swords man ship to prepare wariness for duels and warfare Hector. As early as 1200 BC, the kings used to promote fencing bunts with masks and protection. The fencing bunts with the passage time spread for and wide to Greeks, Romans and Persians. The fall of Roman Empire and subsequent collapse of Roman civilization brought heavy eupnoea and alimony which are used in fencing as sport How ever, with the advent of Renaissance in the 14 century, ligur weaponry such as rapier come back into use and signaled a regression to heavy weaponry.

The times rolled by bringing stagnation to the sporting activity. The new genera in spots how to rest on its haunches for energetic times to down with the advent of fifteen century, modern fencing reared its head and Spain was the first nation to take the surcharge on this sport and published first two fencing manuals in 1471 & 1474 there by heralding the advent of this sport across the Europe. Marxbrundev as a sword play guild was first to be introduced in Europe. The sword man had to hold a sword in one hand and a dagger in the left hand to be free to give blanks in plenty. Italian Fencing Masters, for example, Agrippa, who created the four fencing positions (prime, seconde, tierce, and quarte), and aces Grassi and Vigiani, who characterized the thrust which was initially represented by Capo Ferro,
got to be extremely productive in this time. The 16th century additionally acquired a vast expand the fame of dueling. More aristocrats at amid this period were executed in dueling than in war. The time raced by and the hunger to anchor new sport in the arena gained crunchy with which many striking changes occurred in the 17th century. Fencing could not remain oblivions of the effect and many changes occurred with the passage of time. The heavy sword gave way to lighter fleuret in France and set of rules were framed for smooth and uniform functioning of the game. The weapon for dueling was used for alternating attacks and defense. The duelists did not impale each other as they did not attack at the same time there by making fencing safer and reduced the number of causalities to dueling.

An uncommon variant of the court sword, the foil, was created for practice. In the mean time, another sort of sword, the colichemarde, had been made for dueling. The cutting edge had a triangular cross-area, with somewhat curved sides to diminish weight without lessening quality. The colichemarde developed into the little sword and that into the advanced epee.

The third of the fencing weapons, the saber, was brought into Europe in the late 18th century as an adjustment of the Turkish scimitar, utilized by the Hungarian cavalry. It was effective to the point that different armed forces started utilizing it and another variety, the cutlass, turned into a standard maritime weapon.

The saber was initially an overwhelming, bended sword, however a lighter, all the more effectively wielded weapon with just a slight twist was produced in Italy late in the 19th century for dueling and fencing. The cutting edge fencing weapon is straight, similar to the foil and epee, yet despite everything it has one front line which can be utilized to make hits on an adversary.

Fencing almost is as old as civilization. The primitive man used to do dueling with sticks and staff. The gatka slowly and steadily gave way to dueling by swords with the invention of iron. The honors for initiating this sport goes to Italy and Germany. German fence masters encouraged by the interest and enthusiasm among the public organism the first guild in the 15th century notably the Marxbruder of Frankfurt in 1480. In 1570 Henri Saint-Didier of France offered names toencing's real developments and a large portion of that terminology remains. From the 16th to the 18th century, sword battles and duels were basic. Warriors in these duels utilized a mixed bag of weapons, including singlesticks, quarterstaffs, and backswords, and the sessions were frequently wicked and at times deadly. Three
advancements in the 17th century prompted the notoriety of fencing as a game. The principle was the improvement of a light practice weapon with a smoothed or "thwarted" tip that was likewise cushioned to lessen the danger of harm. This weapon was soon called the foil. Second was the improvement of an arrangement of tenets that constrained the focus to specific ranges of the body. The last development was the quadrille wire-cross section veil which secured the face and made fencing a safe action.

Fencing was initially challenged amid the 1896 Olympics and is one of the couple of games to have been challenged at each Olympic Games. Fencing was one of the couple of games that conceded experts preceding the 1980s. Truth be told, the first Olympic tenets, composed by Baron Pierre de Coubertin (originator and second President of the International Olympic Committee), particularly expressed that fencing experts, called bosses, could contend. Occasions for bosses at the Olympics were held in the foil in 1896 and 1900. Bosses additionally contended in epee and saber occasions at both the Olympics in 1900 and the Intercalary Olympic Games in 1906. Today, men contend in both group and individual occasions at the Olympics utilizing three sorts of swords - the foil, the epee and the saber. Ladies' fencing initially showed up in the Olympics in 1924. Ladies contend in both group and individual occasions at the Olympics utilizing the foil and epee Women's epee occasions were initially added to the Olympic system amid the 1996 Olympics in Atlanta.

In modern fencing, competition is divided among three sword forms, the foil, the epee, and the sabre.

THE FOIL

The Foil is a light, swift weapon. Points may be scored only with the tip of the foil, not the edges. In foil, the trunk of the body is the target area.

THE EPEE
The Epee (pronounced ep-pay) descended from the original duel weapon. Slightly heavier than the foil, the epee is also a thrusting only weapon form. In target area, epee is the entire body—from the tips of your toes to the top of your head.

**THE SABRE**

The Sabre used in today's bouts comes from the days of the mounted cavalry. It was a weapon designed to attack the upper portion of an opponent who was riding a horse. Thus, the sabre is used as a slashing and thrusting weapon. Sabre's target area is everything from the waist up, head included.

Fencing was on the system of the Games of the I Olympiad, Athens 1896, and has been on the project from that point forward. The distinctive sorts of weapon utilized by men are the foil (subsequent to 1896), the saber (following 1896) and the epee (since 1900). Ladies sought the first run through at the Games of the VIII Olympiad, Paris 1924. The foil was the main weapon utilized by ladies until the 1996 Games in Atlanta, which saw the presentation of the ladies' epee. The ladies' saber offered on the project surprisingly at the Athens 2004 Games.

Fencing is a strategic game, a game amusement with as high-impact anaerobic character. Fencing, as most games, has an extraordinary assorted qualities in its investment. We have assorted qualities in physical attributes, for example, age, height, strength and general physicality. Varieties in body measure because of ecological impacts are much bigger than those subsequent from hereditary contrasts (Johnston 1995). Furthermore, fencing is an intricate, rapid and additionally specialized and strategic, multidimensional game (Vertopoulos, Tsolakis, & Remoundou, 2010). Dynamic developments, for example, steps and hops of distinctive bearing and jumps performed to hit the rival, rely upon muscle quality and force (Tsolakis, Kostaki, & Vagenas, 2010). In fencing, the achievement and execution of the competitors rely upon numerous components. Other than the specialized and strategic planning, the power of the aerobic and anaerobic, speed, endurance, body fat (%), flexibility, coordination and ability are the essential variables effecting achievement.
Introduction and Background

Fencing is a high intensity, intermittent sport and therefore requires the ability to produce energy for explosive movements such as lunging, as well as to be able to recover quickly in order to repeat these movements throughout a fight and also throughout a competition. The analysis of the demands and characteristics of sporting disciplines has been popular in the last decade. Most of this work tends to be mono-disciplinary in nature and is focused on sports such as football and cycling (Bangsbo, J., Mohr, M., & Krstrup, P.; 2006, Padilla, S. I., Mukikta, I., Orbananos, J., & Angulo, F.; 2000). Surprisingly, little work has been done on the Olympic sport of fencing (foil, sabre and epee). Fencing is a unique sport, which is reflected in the asymmetrical development of the muscles involved (Sapega, A. A., Minkoff, J., Valsamis, M., & Nicholas, J. A.; 1984). Furthermore, the intermittent nature of fencing puts demands on both the aerobic and anaerobic metabolic systems (Roi, G. S., & Bianchedi, D.; 2008).

Although the sport of fencing has a long history, there is very little research on motor fitness components, anthropometric characteristics and motor educability among foil, sabre and epee fencers and as a result the present study was undertaken with the objectives to find out the differences among foil, sabre and epee fencers on the variable motor fitness components, anthropometric characteristics and motor educability.

STATEMENT OF THE PROBLEM

The problem is stated as, “AN ANALYTICAL STUDY OF MOTOR FITNESS COMPONENTS, ANTHROPOMETRIC CHARACTERISTICS AND MOTOR EDUCABILITY AMONG FOIL, SABRE AND EPEE FENCERS”.

OBJECTIVES OF THE STUDY

This study included the following objectives:

1. To find out the significant differences among Foil, Sabre and Epee Fencers on the variable Motor Fitness Components.
2. To find out the significant differences among Foil, Sabre and Epee Fencers on the variable Anthropometric Characteristics.
3. To find out the significant differences among Foil, Sabre and Epee Fencers on the variable Motor Educability.
HYPOTHESIS OF THE STUDY

*This study included the following hypothesis:*

1. There would be significant differences among Foil, Sabre and Epee Fencers on the variable Motor Fitness Components.
2. There would be significant differences among Foil, Sabre and Epee Fencers on the variable Anthropometric Characteristics.
3. There would be significant differences among Foil, Sabre and Epee Fencers on the variable Motor Educability.

DELIMITATIONS OF THE STUDY

*This study included the following delimitations:*

1. The study was delimited to the male Inter-College level Foil, Sabre and Epee Fencers of 18-25 years of age group.
2. The study was delimited to the Fencers of Guru Nanak Dev University, Punjabi University and Panjab University.
3. The study was further be delimited to the following variables:

**Motor Fitness Components:**

i. Flexibility
ii. Explosive Strength
iii. Balance
iv. Agility
v. Speed

**Anthropometric Characteristics:**

i. Leg Length
ii. Upper Leg Length
iii. Lower Leg Length
iv. Arm Length
v. Upper Arm Length
vi. Lower Arm Length
vii. Hip Width
viii. Shoulder Width
ix. Chest Width
x. Calf Girth
xi. Thigh Girth
Introduction and Background

xii. Chest Girth

Motor Educability:
  i. Front Roll
  ii. Back Roll
  iii. Jumping Half-Turns
  iv. Jumping Full-Turns

LIMITATIONS OF THE STUDY

The following limitations restrict the generalizability of the results of this study:

1. The investigation was cross-sectional in design, therefore, only comparison among various sports categories (i.e., Foil, Sabre and Epee Fencers) can be made-no casual inferences are possible.
2. Factors potentially influencing the physical fitness of adults (i.e., fatigue, anxiety, motivation, etc.) were not measured. Effort was made before and during the testing to reduce the influence of any potential negative factors that could have confounded the results.
3. Limited differing qualities existed among the competitors; along these lines, the outcomes can't be summed up into different games settings.
4. Physical fitness is only one segment that influences athletic performance. There are a plenty of components effecting athletic performance including, however not constrained to, natural ability, nutrition, sleep, life patterns, etc.
5. External influences affecting athlete’s perceptions and physical activity level cannot be controlled for within the control groups.

DEFINITION AND EXPLANATION OF THE TERMS

Motor Fitness

- Motor fitness is a term that depicts a competitor's capacity to perform successfully during games or other physical action. A competitor's motor fitness is a mix of five separate components, each of which is fundamental for high level of performance.

Flexibility

- It has been defined as the capability to perform the sports movements with greater amplitude or range.
Explosive Strength
- It has been defined as the ability to overcome or to act against resistance with higher speed.

Balance
- It has been defined as the state of equilibrium.

Agility
- It has been defined as the capacity to move and alter course and position of the body rapidly and adequately while under control.

Speed
- It has been defined as the capacity of an individual to perform successive movements of the same pattern at a fast rate.

Leg Length
- The leg length has been measured from the greater trochanter (head of the femur) to the outside edge of the center of the foot.

Upper Leg Length
- It is measured from the Iliacspinale to Tibiae.

Lower leg length:
- It is measured from the Tibiae to the floor.

Arm Length
- The arm length was taken from the acromion process above the shoulder joint to the tip of the middle finger.

Upper Arm Length
- It is measured at the upper edge of the head of acromiale to the tip of the top of the point of radial.

Lower Arm Length
- It is measured at the upper edge of the head of the radius to the tip of the middle finger.

Hip Width
- It is the straight distance between the right and left trochanterion points. Trochanterion is the most superior and lateral point on the greater trochanter of the femur.
Shoulder Width
- It is the straight distance between the left and right acromial points. Acromial is the lateral most point on the superior and external border of the acromion process of the scapula.

Chest Width
- Subject stands erect with his arms initially raised and then lowered after the anthropometer is in place. The width of the chest is measured at the level of the nipples during normal breathing as a horizontal distance.

Calf Girth
- It is the maximal girth of the lower leg over the calf muscles.

Thigh Girth
- It is the girth of the thigh at a mid-point of femur length.

Chest Girth
- It is the maximal girth of the chest, which passes below the lower edge of the scapula and just under the mammilla in front.

Upper Arm Girth
- The girth of freely hanging upper-arm measured mid-way between the point acromiale and the radial.

Lower Arm Girth
- It is the maximal girth of the forearm.

Motor Educability
- The motor educability is generally defined as the ability to learn well different motor skills quickly and easily.

Foil
- The Foil is a light, swift weapon. Points may be scored only with the tip of the foil, not the edges. In foil, the trunk of the body is the target area.

Epee
- The Epee (pronounced ep-pay) descended from the original duel weapon. Slightly heavier than the foil, the epee is also a thrusting only weapon form. In target area, epee is the entire body-from the tips of your toes to the top of your head.
Introduction and Background

Sabre

- The Sabre used in today's bouts comes from the days of the mounted cavalry. It was a weapon designed to attack the upper portion of an opponent who was riding a horse. Thus, the sabre is used as a slashing and thrusting weapon. Sabre's target area is everything from the waist up, head included.

SIGNIFICANCE OF THE STUDY

*This study was significant for the following reasons:*

1. The results may be used as the predictors for successful performance in foil, sabre and epee fencers.
2. The findings of this study may give certain guidelines based on basis of motor fitness components, anthropometric characteristics and motor educability for selecting an athlete for highly competitive sports.
3. The findings of this study will be helpful for knowledge regarding motor fitness components, anthropometric characteristics and motor educability.
4. The results of the study will give an insight to sports physician, coaches and physical trainers to understand the role of motor fitness components, anthropometric characteristics and motor educability in fencing sports.
5. The results of this study will be of immense support to the sports scientists, physician, teachers and coaches to frame or modify the existing schedules of training.
6. The results of this study may help to find out the potentialities in the area of different sports that help to canalizes students in different games and sports.
7. The study may help in drawing conclusions and generalizations which may be used by teachers and coaches for better teaching and coaching.
8. This kind of study will help the general masses to take necessary steps to popularize the values of healthful living among the population.
9. The result of the study may help to formulate the basis of development of scientific training programs for different sports categories.