Chapter-I

INTRODUCTION

Sport is intimate, profound and even spiritual. It reaches the root of human existence and, as such, provided an area for the discovery of personal truth. Neither man alone nor did sport alone provide the completeness by existence. Sport and man, revealed to each other the opportunity of determining meaning. In this way, once again, man located a realm of value formation. It was a source of worth and meaning.

Sport and athlete have always been subjects for art. In early Greek Culture, where sport was so fundamental to social life, artists often used athletes as subjects, creating sculpture and decorating vases with athletes in action. Throughout history, artists have been intrigued by the physical beauty of the athletic body and the visual beauty of the athletic performance. Sport has become the object for intellectual analysis and investigation during this century (Daryl & Siedentop, 1998).

Sport is in its origin and intention a movement into transcendence which carries over from the founding decision to play and which builds upon that decision an intensified thrust towards the values of self-consciousness tested through performance, competition and victory. There is certainly a return to seriousness in the discipline of formal sport. There is training, performance and competition. Sport can be demanding, but its essence is as delicate as any perfume and can be readily dissipated (Jenson, Hart & Marie, 1976).

The entire sphere of sport, its structure and dynamics, is a reflection of the society in which it exits. Sport in general, and sport activities in particular, are the creation of people interacting with one another. Sport is influenced by the society and the way in
which the people in sport, especially athlete, are naturally supported or victimized by their involvement. Sport can have both positive and negative effects on participants. But it also calls attention to the possibility that people define and create sport in their lives and that sport can be defined and created in ways that actually stand in opposition to society as a whole (Coakley, J & Jay, 1986).

Sport and games involve competition. Without competition, there is no game. Competition provides a forum within which people strive to become competent, to become excellent. The opportunity for rivalry within sport are many and varied: team against team, individual against individual, individual against record, individual now against a previous best performance, individual and groups striving for excellence within the rules and tradition that make up a sport, including all the festival characteristics that give the sports additional flavor and meaning (Daryl & Siedentop, 1998).

Exercising is like eating. The same meal dished out continuously for a week puts off. A new recipe awakens the taste buds. Likewise, a new exercise awakens the energy buds. The selected exercise should suit the individual. Every single human being is an athlete on the track of life. Each one is endowed with own beauty, uniqueness and natural power waiting to be tapped.

In the world of athletics, the good things the athlete will gain are physical grace, psychological ease and personal integrity. In such a world of devotion and discipline, when one peak on the track and field, will experience a sense of oneness with oneself and one’s maker.

Nurturing and improving basic physical qualities and their elements are the main aspects of preparing athletes for sports and games (Siff, 1994). The aim of general physical training is to develop major motor abilities such as strength, endurance, speed,
flexibility and co-ordination. Training means and methods should be of both general and specific in order to achieve successful results.

High performance athletics require specific biological profile of athlete with outstanding bio-motor abilities and strong physiological traits. Training science has made impressive steps forward in the past decades, which is one of the main reasons for constant improvements in athletics performance. Other dramatic improvements have also been made in quality and quality of training.

Sports’ training in its typical and most effective form is a pedagogically organized process characterized by all the main traits of a strictly directed process of teaching, upbringing and self-education. And also the system of exercises, so arranged as to reach a maximum developing effect in the condition of full control of the process of perfection constitute the methodological foundation of sports training. The athletes training is multi-sided process of the expedient use of aggregate factors (means, methods and conditions) so as to influence the development of an athlete ensure the necessary level of preparedness (Matveyev, 1977).

Human beings have consistently tried to run faster, jump higher and exhibit greater strength, endurance and skill. We are naturally competitive and ambitious of excellence in athletic performances. As a result of practical experience, observation and scientific experimentation, old method of conditioning, though fascinating and rich in tradition, have been discarded and replaced by new methods based on insight and understanding. For centuries, this evaluation towards better methods of conditioning was slow, but in the recent years the dramatic changes that have taken place have brought about some astounding results in performance.
Athletic performance has dramatically progressed over the past few years. Performance levels, unimaginable before, are now common and the number of athletes capable of outstanding results is increasing. One among the contributing factor is that athletics is a challenging field, and intense motivation has encouraged long and hard hours of work. Also, coaching has become more sophisticated, partially from the assistance of sports sciences have progressed from descriptive to scientific. A broader base of knowledge about athletes now exists, which is reflected in training methodology. (Bompa, 1993).

Sports’ training is a process of athletic improvement, which is conducted on the basis of scientific principles and which, through systematic development of mental and physical efficiency, capacity and motivation, enables the athletes to produce outstanding and record breaking athletic performances. (Dietrich & Harre, 1982).

Physical training is one of the most important ingredients in training to achieve high performance. The objectives of physical training are to increase the athlete’s physiological potential and to develop bio-motor abilities to the highest standards.

Physical activity leads to anatomical, physiological, biochemical and psychological changes. The efficiency of a physical activity results from its duration, distance and repetitions, load and velocity and the frequency of performance. While planning the dynamics of training, consider these aspects, referred to as the variables of training according to the functional and psychological characteristics of a competition. Throughout the training phases preceding a competition, define which component to emphasize and achieve the planned performance objective. (Bompa, 1993).
Endurance refers to the ability to perform work of a given intensity over a time period, and is sometimes called stamina. The main factor which limits and at the same time affects performance is fatigue. An athlete is considered to have good endurance when he does not easily fatigue, or can continue to perform in a state of fatigue. Endurance, of all the bio-motor abilities, should be developed first. Without endurance it is difficult to repeat other types of training enough to develop the other components of fitness. There are two basic types of endurance aerobic endurance and anaerobic endurance. (Jack, 1977).

Aerobic means "with oxygen" and aerobic endurance means muscular work and movement done using oxygen to release energy from the muscle fuels. We have seen how the absorption and transport of the oxygen to the muscles is carried out by the cardio-respiratory system. Aerobic training leads to both a strong cardio-respiratory system and an increased ability to use oxygen in the muscles. Aerobic endurance can be developed by continuous or interval running, the longer the duration of an event is more important.

Without oxygen (anaerobic) – when there is not enough oxygen, waste products will pile up in the muscles with oxygen (aerobic) – this means that the exercise is performed under circumstances where there is enough oxygen in the muscles. When you wish to improve your endurance fitness, you should train your aerobic system and move your lactate threshold.

Aerobic training can be divided into three overlapping training intensity areas: low, moderate and high intensity training. The overall purpose of Aerobic training is to improve the oxygen transport in your circulation and Improve the muscle’s ability to use the available oxygen improve the ability to recuperate after hard exercise.
Continuous training is a type of physical training that involves activity without rest. This type of training may be of high intensity, or moderate intensity with an extended duration, or fartlek training. Continuous training means that Continuous training can be broken down into the following sub-divisions that have slightly different effects upon the energy pathways (Michalsik & Bangsbo, 2002).

Aerobic continuous training is recommended to improve the central transport capacity through stimulation of adaptive changes in the heart muscle itself. Studies have shown that continuous training (compared to interval training) results in greater heart rate reduction during performance of sub-maximal exercise.

Training should be at an intensity of approximately 75% of V02 max (volume of oxygen uptake) and involve as large a muscle mass as possible. Cross-country skiing, running, cycling, tennis, jogging and swimming are good examples. The mode of training is not critical in terms of specificity to fencing since the training effect on the heart function is, for the most part, transferable to the use of different muscle groups. There is a belief that due to the fine neuromuscular co-ordination required with the fencing specific reflexes, swimming, with the water acting as a form of resistance, can detrimentally affect this co-ordination and the timing of reflexes. If the athlete does decide to use swimming to develop their aerobic base, it would be recommended not to schedule this training prior to a dodge ball session. After a dodge ball training session would be more appropriate, or on alternate days to your dodge ball specific training. (Jack, 1977).

Sports Mental Coaching, also known as sports mental training, is that segment of sports training that concentrates specifically on helping athletes break through the mental barriers that are keeping them from performing up to their peak potential. By focusing on the mental skills needed to be successful in any sporting competition, mental game
coaching achieves the overall goal of performance improvement. The trained professionals, who do this mental coaching, employ proven techniques to accomplish this important work.

Concentration, confidence are generally considered to be the main mental qualities that are important for successful performance in most sports and the development of these within the athlete is a major part of the work of the mental trainer. Concentration - ability to maintain focus and confidence - believe in one's abilities.

This is the mental quality to focus on the task in hand. If the athlete lacks concentration then their athletic abilities will not be effectively or efficiently applied to the task. Broad/Narrow continuum - the athlete focuses on a large or small number of stimuli. Internal/External continuum - the athlete focuses on internal stimuli (feelings) or external stimuli (ball). The demand for concentration varies with the sport, Sustained concentration - distance running, cycling, tennis, squash, Short bursts of concentration - cricket, golf, shooting, athletic field events and intense concentration - sprinting events, skiing.

Common distractions are anxiety, mistakes, fatigue, weather, public announcements, coach, manager, opponent, negative thoughts etc. Strategies to improve concentration are very personal. One way, which is taught to mental trainers, to maintain focus is to set process goals for each session or competition. The athlete will have an overall goal for which the athlete will identify a number of process goals which help focus on specific aspects of the task. For each of these goals the athlete can use a trigger word (a word which instantly refocuses the athlete's concentration to the goal) e.g. sprinting technique requires the athlete to focus on being tall, relaxed, smooth and to drive with the elbows - trigger word could be "technique "Athletes will develop a routine
for competition, which may include the night before, the morning, pre competition, competition and post competition routines. If these routines are appropriately structured then they can prove a useful aid to concentration.

Confidence results from the comparison an athlete makes between the goal and their ability. The athlete will have self-confidence if they believe they can achieve their goal. (Comes back to a quote of mine - "You only achieve what you believe"). When an athlete has self-confidence they will tend to persevere even when things are not going to plan, show enthusiasm be positive in their approach, take their share of the responsibility in success and failure.

The increased stress of competitions can cause athletes to react both physically and mentally in a manner that can negatively affect their performance abilities. They may become tense, their heart rates race, they break into a cold sweat, they worry about the outcome of the competition, they find it hard to concentrate on the task in hand. This has led coaches & athletes to take an increasing interest in the field of sport psychology and in particular in the area of competitive anxiety. That interest has focused on techniques that athletes can use in the competitive situation to maintain control and optimize their performance. (Mahoney & Avenert, 1977).

**NEED FOR STUDY**

Training for success in the sports can be the biggest challenges faced by most of the athletes and coaches it becomes increasingly important to select the proper drills and exercises specific to particular games or events, because as skill and performance increase, the available range of exercises that optimally stimulate improvement narrows. Thus, the training programme shifts from general preparation to more specific preparation for competitive activity.
The specialized field of sports psychology has developed rapidly in recent years. The importance of a sports psychologist as an integral member of the coaching and health care teams is widely recognized. Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope up with competitive pressures, fine-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete’s holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice.

Athletes learn and enhance many skills, including mental skills, based on information and training provided by their coaches. Thus, it is important to assess the value that coaches place in teaching mental skills to their athletes and the percentage of time that coaches spend teaching these mental skills to the athletes on their teams. This information will aid those in the field of sport psychology in deepening their understanding of the role that coaches play in instilling mental skills in their athletes.

Both physical fitness and mental fitness play vital role in an athletic event. Those who are achieves or performs well in a sports event need not only physical fitness but also mental fitness. The athletic events like sprint, jumping and throwing events can be overed within fractions of seconds, and so those who participate in these events need only physical fitness, and they don’t need much mental fitness.
The athletes who participate in middle distance, long distance or continuous running have to run continuously for long duration. At the time of running they feel loneliness which results in decrease of self-confidence, concentration ability, relaxation ability and increase in anxiety, inferiority complex and fears. Due to these reasons, the athlete cannot do better performance.

To overcome these problems I wish to suggest that physical training alone is not enough; the athletes need mental training also. Based on these concepts I have taken this study.

**STATEMENT OF THE PROBLEM**

Keeping the above concept, the purpose of this study was to find out the effects of continuous running with and without mental training on selected Bio-motor, Psychological Parameters and Athletic Performance variables among college men athletes. The dependent variables such as speed endurance, cardio respiratory endurance, sports competition anxiety, imagery ability, mental preparation, self-confidence, anxiety and worry management, concentration ability, relaxation ability, performance of 800 metres run and 1500 metres run.

Particularly, the study was conducted to investigate if there were any significant difference in participants speed endurance, cardio respiratory endurance, sports competition anxiety, imagery ability, mental preparation, self-confidence, anxiety and worry management, concentration ability, relaxation ability, performance of 800 metres run and 1500 metres run due to the effect of continuous running with mental training and continuous running without mental training. As such, the study was focused on the following questions:
RESEARCH QUESTIONS

1. Could the continuous running with mental training programme improve the selected dependent variables while the presence of covariate (pre test)?

2. Could the continuous running without mental training programme improve the selected dependent variables while the presence of covariate (pre test)?

3. Could the continuous running with mental training and continuous running without mental training programmes differs with each other and also with the control group while improving the selected dependent variables?

ASSUMPTIONS

The validity of this study will rely on the following assumptions:

1. Participants performed the continuous running with mental training and continuous running without mental training protocol correctly.

2. Participants performed the assigned training sessions separately each group, for three days per week.

3. Participants did not perform any vigorous exercise during the course study.

4. Participants were tested accurately by standardized test items.

5. Participants complied with the best of their ability to the training and testing directions.

HYPOTHESES

It has been scientifically accepted that any systematic training over a continuous period of time would lead to produce changes in selected dependent variables. Based on the study conducted and reviewing the related literature available in the area, the investigator framed the following hypotheses were formulated and it was tested at 0.05 level of confidence.
1. There would be significant improvement on the selected dependent variables due to continuous running with mental training.

2. There would be significant improvement on the selected dependent variables due to continuous running without mental training.

3. There would not be significant improvement on the selected dependent variables of control group.

4. There would be significant difference among the experimental and control groups regarding the magnitude of improvement on the selected dependent variables.

**DELIMITATIONS**

This study was delimited in the following factors.

1. To achieve the purpose of the study, 45 men athletes were selected from Alagappa University College of Physical Education, Karaikudi, Tamil Nadu, India at random during the academic year 2011-2012.

2. The age of the participants ranged from 18 to 24 years.

3. The selected participants were randomly assigned into three groups of 15 each namely continuous running with mental training (Group I), continuous running without mental training (Group II) and control groups (Group III).

4. The training period was delimited to three alternative days per week up to 12 weeks.

5. Group I and II underwent continuous running simultaneously for 45 to 90 minutes in three alternate days (Monday, Wednesday and Friday) during morning session for 12 weeks.

5. Group I alone underwent mental training for 30 minutes in three alternate days (Monday, Wednesday and Friday) during evening session for 12 weeks.
6. Group III acted as control that did not participate in any specific training on par with experimental Groups.

7. The study was delimited to the following dependent variables such as

**Bio-motor Variables**

- Speed endurance
- Cardio respiratory endurance

**Psychological Parameters**

- Sports competition anxiety
- Imagery ability
- Mental preparation
- Self-confidence
- Anxiety and worry management
- Concentration ability
- Relaxation ability

**Performance Variables**

- Performance of 800 metres run and
- 1500 metres run.

8. The selected dependent variables for the study were assessed by the following standardized test items. Speed endurance and cardio respiratory endurance were assessed by administering 150 metres run test and coopers 12 minutes run/walk test. Sports competition anxiety was collected by administrating SCAT (Sports Competition Anxiety Test) questionnaire. Imagery ability, mental preparation, self-confidence, anxiety and worry management, concentration ability and relaxation ability were measured by administrating Hardy and Nelsons mental skills questionnaire and performance of 800
metres and 1500 metres were collected by administering 800 metres run test and 1500 metres run test respectively.

9. Since the manual operation was made during the performance of 150 metres run, 800 metres run and 1500 metres run, the time was recorded in one tenth of a second.

10. The data were collected on selected dependent variables at before and immediately after the experimental period as pre and post tests respectively.

11. All participants were healthy, physically active individuals with some sport experience.

LIMITATIONS

The following limitations were not considered while interpreting the results of the study.

1. The environmental conditions and levels of acclimatization are not considered during the 12 weeks of training.

2. Only 18 to 24 years aged men athletes were included in the study, therefore, the results cannot be generalized to other population.

3. The researcher was not controlled all outside activities like nutrition, supplements, physical activity and social habits of the participants.

4. The previous experience of the participants in the field of sports and games were not considered which might be influencing on the training and data collection.

5. Though the participants were motivated verbally, no attempt was made to differentiate motivation level during the period of training and testing.

6. Individual differences were not considered.
SIGNIFICANCE OF THE STUDY

In today’s sporting world, coaches are being called upon to produce the optimal amount of physical improvement in the least amount of time. The results of the present study may contribute the following:

1. This study may help the coaches to provide more effective and time efficient workouts for their athletes.

2. Continuous training and mental training have yielded valuable information for the professional colleagues of physical education, coaches and athlete.

3. This study was designed to understand the importance and difference among each group separately.

4. This new concept produced interesting information that may lead to restructuring the training programme according to their requirement upon the demands.

5. Most of the coaches would like their training programmes to be as sport-specific, in their training methods, as possible. The result presented in this study will help the coaches, and hopefully, gravitate towards more sport-specific.

6. The ultimate goal of research in physical education is to help coaches and physical educators to train their athletes and players based on new concepts to improve their performance.

7. This study would also add new knowledge in the area of sports training.

8. The results of the study may be useful to the professional colleague’s of physical education and coaches in the following ways:

   i. To study the effect of continuous running with mental training on selected biomotor, psychological parameters and athletics performance.
ii. To study the effect of continuous running without mental training on selected bio-motor, psychological parameters and athletics performance.

DEFINITIONS OF OPERATIONAL TERMS

Continuous Running

Continuous Running is a type of physical training that involves activity without rest. This type of training may be of high intensity, or moderate intensity with an extended duration.

Mental Training

Mental training is the segment of sports psychology that concentrates specifically on helping athletes break through the mental barriers that are keeping them from performing up to their peak potential.

Speed Endurance

The ability to resist fatigue in activities lasting to 45 seconds is speed endurance. (Singh)

Cardio Respiratory Endurance

It is the ability to do sports movements, with the desired quality and speed, under conditions of fatigue.

Anxiety

A state of uneasiness and apprehension, as about future uncertainties.

Self-confidence

Self-confidence is commonly defined as the sureness of feeling that you are equal to the task at hand. (Robert)
Imagery

The sportsmen mentally picture themselves going through the actual movements in their mind.

Relaxation Ability

Relaxation is one of the psych-up strategies which have several techniques namely progressive relaxation, bio-feedback, transcendental meditation etcetera. Generally relaxation will give physiological and psychological benefits to the sportsman.

Concentration Ability

Concentration is the mental quality to focus on the task in hand. If the athlete lacks concentration then their athletic abilities will not be effectively or efficiently applied to the task. (Schmind)

Performance of 800 Metres and 1500 metres

Performance of 800 metres and 1500 metres were measured by conducting the regular competition on 400 metres standard track and this performance of 800 metres and 1500 metres were considered as performance variables for this study.