

**A PSYCHOLOGICAL INTERVENTION STRATEGY  
TO CONTROL DEBILITATING FACTORS  
IN SPORT PERFORMANCE**

**Thesis**  
submitted in partial fulfilment of the requirements for the degree of  
**Doctor of Philosophy**  
in Psychology

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**CERTIFICATE**

I, Dr. C. Jayan, do hereby certify that this dissertation entitled  
**A Psychological Intervention Strategy to Control Debilitating Factors  
in Sport Performance** is a record of bona fide study and research carried  
out by **Santhosh A. M.** under my supervision and guidance.

**Dr. C. Jayan**  
(Supervising teacher)

## DECLARATION

I, Santhosh A.M., do hereby declare that this thesis  
**A Psychological Intervention Strategy to Control Debilitating Factors  
in Sport Performance** has not been submitted for the award of a Degree,  
Diploma, Title or Recognition before.

C.U. Campus



**SANTHOSH A. M.**

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*Dedicated to..*

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Chapter 1

# Introduction

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Human organism is an extremely complex structure with unimaginable complex functions. Nowadays more and more emphasis is being laid on the study of psychological factors, which control, condition and modify human behaviour. This investigation focuses on human behaviour in certain specific situations-namely, sport.

In fact, sport, in the wider perspective means pleasure as well as competition. As in other fields of human activity so in sport, competition has become very intense and all individuals and nations are striving very hard to gain supremacy over others. Olympic and other world competitions may stand testimony this fact.

Sport psychology is an application of principles, methods and techniques of analysis, appraisal and enhancement for optimising human sport or human athletic behaviour.

Association for the Advancement of Applied Sport Psychology (AAASP), one of the professional societies representing sport psychologists, gives a comprehensive and generally accepted definition. According to the AAASP: Sport psychology is:"(a)the study of the psychological and mental factors that influence and

are influenced by participation and performance in sport, exercise, and physical activity, and (b) the application of the knowledge gained through this study to everyday setting, sport psychology professionals are interested in how participation in sport, exercise, and physical activity may enhance personal development and well-being throughout the life span" (LeUnes and Nation, 2002).

An investigator who aspires to apply psychology to the theory and practice of sport would discover a wealth of opportunities for the mental and behavioural ingredients of sport are legion. Not only are there relatively mundane elements like skill, in a multitude of forms, and the methods of its acquisition, but there are also symbolic and even paradoxical elements (Cohen, 1975). Symbolic, because a physical art, such as kicking or hitting a ball, although it is due to some extent for its own sake, is not merely an end in itself. It represents a blow struck for one's side as well as for one's self-image. The joy of victory is like surviving an ordeal; while the chagrin of defeat may be an alternated symbol of death. Divested of its symbolic character as a genuine contest, a game may lose much of its significance.

Symbolic elements also appear to enter in any competition at a national or international level. Perhaps the 'image' of an opposing team shapes the course of the contest. In cricket, India-Pakistan 'one-dayers' are typical examples for 'symbolic war', though most of the team-mates usually claim, "it's only a game". Such comments themselves remark that it is not 'just' a game.

Sport is 'paradoxical' because it is an activity which is at once trivial and yet profoundly serious. The rules are sacred, and the slightest violation encounters strict penalties imposed in deadly earnest.

There is another paradoxical effect, which occurs as a result of practice. It may be taken as axiomatic that the more natural, automatic or habitual a series of actions the less conscious we are of doing them or of the way we do them. In natural or habitual activities, it is better not to stop and think (Cohen, 1975). If a sprinter, while running, had to consider carefully which leg to put forward first, which second, and so on, so as not to make a mistake, he might soon find himself in difficulties, and probably come to a halt. Practice makes more perfect, but at the same time, and this is the paradox, it reduces awareness of what is done.

Human being is competitive by nature. He learns competition prior to co-operation and involves himself in a variety of competitions throughout his life span. One competes with other to make his presence noticeable, or to show his supremacy and records. Today's athletes are sophisticatedly prepared by experts, sport scientists, coaches and sport psychologists who tussle among themselves to win and then to fulfil their dreams and enjoy fruits of their efforts they put in for years together. The fact is that today's athletes are simply stronger, faster and more efficient than yesterdays and tomorrow may be still better.

The main aim of modern sport competition is to detect and diagnose the human ability at an early stage of life and channelise it in the right direction to realise the achievements aimed at in a particular sport/game (Chakraborty and Sharma, 1998).

The question arises why is it that two runners with identical physical capacities (eg: percentage of fast and slow twitch muscle, fibres, reaction time, limb size, aerobic capacity etc.) seen vastly different times? Why is it that some athletes with all the physical attributes never really excel? The greatest barriers we confront is

our pursuit of excellence are psychological barriers which we impose upon ourselves, knowingly or unknowingly.

An applied sport psychologist focuses on the application of sport psychology in sport and exercise setting. He/she typically devises performance enhancement strategies for athletes, conducts workshops for athletes, conducts workshops for coaches and athletic administrators and consults with athletic teams ranging from youth sport through the professional level.

On one hand, early participation in sport is widely believed to be a mechanism for building character, encouraging sportsmanship, and promoting healthy physical, psychological and social development. On the other, sport participation may also be viewed as an emotional pressure cooker in which children are subjected to a host of undesirable stresses. Where the truth actually lies, of course, is a matter of conjuncture.

Perhaps the most blatant encouragement of competition today occurs in the sport world where individuals and groups pursue artificially limited goals. It is not surprising that in a competitive situation some should 'do well', for an ordering is established and therefore by definition they have succeeded, at

least in social terms. However, for those who have entered the competition and done less than well, one may predict other unpleasant psychological repercussions. If interviews with losers are conducted after a context an array of psychological defences may be observed from weeping to anger, from rationalisation to externalisation, and from withdrawal to outright denial. However, there are two conditions in which the psychological dysfunction associated with defeat in sport do not occur. The first is when the individual's status in a group is secure so that the outcome of the competition is not instrumental to his position and the second is when the psychological motivation for engaging in the sport is co-operative oriented rather than competitive.

Two athletes (or teams) engaged in a sport from a pure competence orientation will identify with the excellence of skill required in the sport, will co-operate in conforming to agreed upon rules and will appreciate the efforts of the 'opponent' who is often instrumental in increasing the performance of both. There will not be the backbiting, cheating, tantrums, aggression and resentment which unfortunately characterise much athletic competition. If this were achieved in sport, performance levels would be raised, participation in athletics would not have the adverse psychological

effects now common to those who compete, and sport would not act as the conveyor of the adverse social values much of it now represents (Butt, 1975). By adverse, Butt means that because competitive values and behaviours are more visible and tend to predominate over co-operative values, because of the current high social valuation placed on winning a contest and because of the increased monetary power associated with competitive sport, it serves as a social model which is dysfunctional to long range planning in the modern world.

Modern development of science and technology has comparatively created more psychic problems for everyone than ever before. A sport man is a part of the social milieu in which he lives. Social and political ideologies emphasising 'winning' ever sports, have made the matter worse for the sport men. Psychic tensions, anxieties, fears etc. are sport men have non-swelled to enormous proportions. He is becoming more anxious, more selfish, more aggressive, more injured and hence a deterioration of performance which increases the former in turn.

## **1.1 Anxiety and sport**

The relationship among anxiety, stress, arousal and related terms are important issues because major interpretative problems have beset the literature due to the fact that these terms are often used interchangeably although numerous theoretical distinctions have been made among them. Although most people tend to view stress as a negative state, in actuality stress is neither positive nor negative. Rather, it is one's interpretation of the environmental demand that determines whether or not the stress will be positive, negative or neutral, each with a different valence and having different aspect. When individuals feel overwhelmed by a stressor and believe that they are unable to meet its demands they experience negative stress, distress or anxiety.

The terms distress and anxiety are used quite interchangeably in the sport and anxiety literatures. However, because the term anxiety is somewhat more common in sport research, this is the term used in this present study.

One of the major research avenues for sport psychology has been the influence that anxiety has on performance. Anxiety and other unpleasant feelings are integral to participation in

competitive sport. Consistent with general anxiety research, the major situational factor found to be related to the perception of threat during and immediately following sport competition is success - failure or game win - loss (Frost, 1971).

Since the 1960s most sport psychology writers have emphasised the notion that an optimal level of arousal is associated with the best performance, whereas arousal levels above or below optimal level are related to inferior performance. Indeed, the inverted-U hypothesis has become stable principle in both academic and professional sport psychology literature. In recent years, however, a number of European sport psychologists have critically examined the inverted - U hypothesis and have questioned both its conceptual and practical utility. From a different but certainly related perspective, a number of sport psychology investigators have begun advocating the view that anxiety is a multidimensional rather than a unitary phenomenon. Pachauri (1999) has reviewed this line of research and identifies the beginning of such a dimension in the work of Borkovek and Davidson and Schwartz, who differentiated between cognitive and somatic anxiety.

When applied to sport, multidimensional anxiety theory predicts that cognitive and somatic anxiety will differentially influence athletic performance specifically, it predicts a powerful negative linear relationship between cognitive state anxiety and performance and a less powerful, inverted-U relationship between somatic anxiety and performance (Wann, 1997).

## **1.2 Injury and sport**

Injuries associated with sport and exercises are a common source of irritation for all concerned. One survey by Powel and Barber-Foss in 1999 indicates that 6 million US high school youth from some 20,000 schools take part in interscholastic sports each year. Of this number, more than 2 million will be injured, resulting in 500,000 visits to physicians and 30,000 hospitalisations. While such reports are only the tip of iceberg, they underscore the fact that sport injuries are a fact of life (LeUnes and Nation, 2002). Similar comprehensive studies in Indian context yet to be conducted. Nevertheless the psychological impact of sport injuries can not be ignored.

One, the 'affective cycle theory' of response to athletic injury of Weil and Fine in 1993, argues that reactions to injury are a

function of three different responses: distress, denial and determent coping. One year later Brewer has proposed a second approach, the cognitive 'appraisal theory' of response to athletic injury. In this model, the athlete's response to injury is a function of the interaction between personality and situational factors. In turn, the emotional response to the injury and the resultant behavioural response are salient (LeUnes and Nation, 2002).

Athletes display a wide variety of psychological responses to injury including negative reactions such as depression, low self-esteem and distress. Factors such as magnitude of the injury, the success of the rehabilitation programme, athlete's personality, and the level of competition have an impact on the athlete's responses, rendering the responses somewhat idiosyncratic. However, some generalities across different populations and settings can be found. To help in the understanding of psychological responses to athletic injuries, a few authors have developed comprehensive theories of reactions to injuries.

In 1993, Heil has noted that the purpose of the psychological assessment of an injured athlete is twofold. First, the sport psychologist must determine the subjective cost of the injury to

the athlete. The second purpose is to develop an understanding of the athletes coping strategies and abilities. Each athlete will cope with an injury in a different fashion. Only through an understanding of the athlete's coping styles and abilities will the psychologist be able to prescribe an intervention strategy that uses the athlete's coping strengths and assists the athlete with his or her coping weaknesses (Wann, 1997).

Grisogono (1996), a physiotherapist runs a full time sports injury clinic, comprehensively gives an account of injuries in children's sport. He remarks that most children only suffer aches and pains through relatively simple injuries which can be diagnosed and treated successfully. However, such observations could not be generalized unless, the socio-cultural variations over nations should be considered. Even the attitude may influence the nature and extend of psychological injury made by sport injury.

### **1.3 Aggression and sport**

We most certainly live in a world filled with acts of violence. Wars seem to be driven by class conflicts, tribal rivalries, religious conviction, racial or ethnic hatred and dreams of geographical expansionism.

Anger, an acute emotional reaction elicited by any of a number of stimulating situations, including threat, overt aggression, restraint, verbal attacks, disappointment, or frustration, and characterised by strong responses in the autonomic nervous system, particularly by emergency reactions of the sympathetic division and by implicit or overt attack responses that may be either somatic or verbal (Atkinson *et al.*, 1996).

Commenting on social learning of violence in minor Hockey, about three decades before, Smith (1978) asserted that an issue gathering much popular attention was whether violence in sport had increased, decreased or remained constant over the decades. He added that certainly it was not a recent phenomenon. Smiths' words have more relevance in 21st century for violence in sport has increased.

#### **1.4 Psychological interventions**

Although the primary goal of sport psychology interventions is the enhancement of performance, athletes, coaches and sports psychologists may use intervention strategies for other reasons as well. There are a number of methods for regulating the anxiety and arousal, and to increase self-confidence, imagery skills,

attention control as well as comprehensive programme designed to enhance psychological skills. Certain intervention strategies are used to assist injured athletes.

### **1.5 Need for the present study**

Certainly, when sport is compared to the most important challenges facing society: third world poverty, environmental challenges, a cure for cancer, etc. it is amazing that the relative passion that sport draws and demands. It is not unusual to have top business executives, politicians, surgeons, police and scientists all checking sports first in the morning papers. Olympics, cricket, or football world cups stand testimony for this passion people have towards sport. Cricket world cup 2003 proved it again, where the role of an Australian sport psychologist, Sandy Gordon, is highlighted that India entered the final of the world cup (2003) after its crippled start in the tournament.

Competitive sport reflects cultural aspirations of a community and they have now become an inextricable part of all civilisations. Among the psychosocial values espoused by proponents of competitive sports are the development of character, social adjustment, desirable personality traits, emotional control,

positive attitudes, sportsmanship, leadership, consideration for others, responsibility, co-operation, self-discipline, self-confidence, initiative, courage, loyalty and self expression (Smoll and Smith, 1978).

From the point of view of our discussion, sport will be taken as competitive contexts rather than recreative activities. As a matter of fact phenomenal changes have occurred handling sportsmen. More and more specialisation is creeping in and now it is not a child's play for everyone to become a top class athlete undergoing rigorous scientific training in a specialised event.

All other thing being equal in two opponents in sport, the one with better '*psychological training*' will always have an upper edge over the other. As Raja Balendra Singh, former president of Indian Olympic Association denotes recreation and competition in sport go hand in hand and it is the latter which has become the focus of attention of every nation in the world. More scientific ways and means are being applied everywhere. Not only to win 'medals', but also to test the human efficiency, both physical and mental. More important than physical fitness is the psychological

conditioning of the sportsmen so that they can generate in themselves 'a will to fight'.

Competition is a biological as well as a socio-cultural phenomenon and has been existing in nature and in human society from time immemorial: it is universal tendency with the human beings to improve their standard of living, invent hundreds and thousands of things and improve their performance in almost every walk of life. Sport is not devoid of this fact. Competition, in whatever form, not only keeps the interest alive but also provides thrill, satisfies one's urge for recognition and dominance. There cannot be two opinions about the fact that competition provides opportunities to the people to know their own states in relation to other; realise their potentialities and drawbacks and finally help them improve their own performance for their own betterment and that of the society (Kamlesh, 1983).

The fact that there exist differences between cultures in terms of their competitiveness in sport should not be surprising when the reinforcement contingencies are considered. Similarly, individual differences succumb to the same kind of analysis.

Although biological processes are central to the experiencing of anxiety, cognitive and behavioural aspects of stress relatively also bear addressing. How athletes think about threatening events may determine both the level of felt-discomfort and the course of action for alleviating the tension. Occasionally people become so preoccupied with their negative thoughts that they are unable to resolve even routine life events. As a result their confidence about handling stress diminishes. This process involves into a negative circular spiral in which one disaster in counter precipitates yet another and on it goes. The ultimate outcome of these recurrent episodes is emotional debilitation that may require psychological intervention (LeUnes and Nation, 2002).

It cannot be denied that sport performance could be influenced by many psychological factors negatively or positively. The present study intends to identify those negatively affecting psychological factors prevailing in the field as the first phase. Those factors tare considered to construct an intervention programme to control the same. Not to mention that such an intervention plan is expected to enhance sport performance, though performance enhancement, excluded from as an objective does not come under the scope of the study.

## **1.6 Statement of the problem**

“A Psychological Intervention Strategy to Control Debilitating Factors in Sport Performance.”

## **1.7 Definition of key terms**

Operational definitions of the key terms involved in the title are explained below in order to have clarity about the study.

***Psychological interventions strategy*** refers to a strategy for altering existing levels of sport competition trait anxiety, attitude towards sport injury, and sport aggression.

***Debilitating factors*** refers to those psychological factors which hinder sport performance directly or/and indirectly.

The factors in the present study are defined as follows:

### **1.7.1 Sport competition anxiety**

Trait anxiety is a predisposition to perceive certain environmental situations as threatening, and to respond to these situations with increased state anxiety, which is situation specific. In the present investigation predisposition of sport persons to perceive sport competition situations as threatening was focused.

Two major dimensions of anxiety, cognitive and somatic anxiety were also considered.

Cognitive trait anxiety is the mental component of trait anxiety caused by such things as fear of negative social evaluation, fear of failure, and loss of self-esteem.

Somatic trait anxiety is the physical component of anxiety and reflects the perception of such physiological responses as increased heart rate, respiration, and muscular tension.

### **1.7.2 Attitude towards sport injury**

An attitude is defined as the predisposition to respond in a particular manner towards the aspects of environment. Here the negative predisposition to respond to sport injuries is measured. Attitude has three major components as cognitive, affective, and behavioral components. All of these three aspects related to sport injury are considered.

### **1.7.3 Sport aggression**

Aggression is defined as an overt verbal or physical act that can psychologically or physically injure another person or oneself. It has been further described as hostile aggression where the

“primary goal is the injury of another human being” or instrumental aggression “the intent is to harm another but the goal is to realize some external goal”. usually in a sport setting the goal is to win the competition.

#### **1.4 Objectives of the study**

##### ***Broad objectives***

1. To identify and explore psychological factors debilitating sport performance
2. To formulate a psychological intervention strategy to control those debilitating factors

##### ***Specific objectives***

1. To identify the psychological factors debilitating sport performance
2. To construct standardized psychological inventory for measuring sport competition trait anxiety
3. To construct standardized psychological inventory for measuring attitude towards sport injury.
4. To construct standardized psychological inventory for measuring sport aggression.

5. To study the relationship among psychological factors debilitating sport performance: sport competition trait anxiety, attitude towards sport injury, and sport aggression.
6. To study the influence of sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression.
7. To device psychological intervention strategy to control those psychological debilitating factors by making use of therapeutic use of theatre.
8. To test the efficacy of newly developed intervention strategy to control psychological factors that debilitate sport performance such sport competition trait anxiety, attitude towards sport injury, and sport aggression.

### **1.5 Hypotheses**

Upholding the objectives mentioned above, the following hypotheses have been proposed.

1. There will be statistically significant relationship between sport competition anxiety, attitude towards sport injury, and sport aggression.

2. There will be statistically significant influence of sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression.
3. There will be significant difference between before and after assessment of experimental group on sport competition anxiety, attitude towards sport injury, and sport aggression
4. There will be significant difference between before and after intervention assessment of control group on sport competition anxiety, attitude towards sport injury, and sport aggression
5. There will be significant difference between experimental and control groups after intervention on sport competition anxiety, attitude towards sport injury, and sport aggression

## **1.6 Limitations of the study**

The following are certain limitations of the study:

1. The present study focused only on three major psychological factors debilitating sport performance.
2. The relationship between debilitating factors and actual sport performance is not studied.

## 1.7 Organization of the report

The study is reported under seven chapters such as:

**Chapter 1:** this chapter explains the important aspects of the study viz., need for the present study, statement of the problem, definition of key terms, objectives of the study, hypotheses, and limitations of the study.

**Chapter 2:** in this chapter theoretical as well as empirical literature related to sport competition anxiety, attitude towards sport injury, sport aggression and different psychological interventions are briefed.

**Chapter 3:** This chapter details the different methods adopted to meet the objectives under three major sections viz., study 1, study 2 and study 3. These three sections are further divided into subsections as follow.

3.1. Study 1: identification of psychological factors debilitating sport performance

3.1.1. Objective

3.1.2. The sample

3.1.3. Type of interview

- 3.1.4. Interview schedule
- 3.1.5. Fixing up of the interview
- 3.1.6. Actual interview
- 3.1.7. Middle phase
- 3.1.8. Concluding phase
- 3.1.9. Recording of responses
- 3.1.10. Reliability
- 3.1.11. Validity
- 3.1.12. Analysis of the data

3.2. Study 2: An exploration of factors debilitating sport performance.

- 3.2.1. Objectives
- 3.2.2. Sample
- 3.2.3. The tools used
- 3.2.4. Data collection procedure
- 3.2.5. Scoring and tabulation
- 3.2.6. Statistical techniques used

3.3. Study 3: effectiveness of psychotherapeutic use of theatre to control factors debilitating sport performance.

- 3.3.1. Objective
- 3.3.2. The Sample
- 3.3.3. Design
- 3.3.4. The tools used
- 3.3.5. Procedure
  - 3.3.5.1 Pre-intervention assessment
  - 3.3.5.2 Intervention
  - 3.3.5.3 Post-intervention assessment
- 3.3.6 Scoring and tabulation
- 3.3.7 Statistical techniques used

**Chapter 4:** narrates the development and standardization of sport specific inventories to measure sport competition trait anxiety, attitude towards sport injury, and sport aggression.

- 4.1. Objective
- 4.2. Need for the New Inventories
- 4.3. Description of the Variables Measured
- 4.4. Item Construction
- 4.5. The Sample
- 4.6. Administration
- 4.7. Method of Scoring

#### 4.8. Item analysis and selection of items

4.8.1. Item analysis of 'Inventory for Sport Competition Anxiety' (ISCA).

4.8.2. Item analysis of Sport Injury Attitude Scale (SIAS).

4.8.3. Item analysis of Inventory for Sport Aggression (ISA)

#### 4.9. Reliability

#### 4.10. Validity

**Chapter 5:** gives an account of development of psychological intervention strategy to control factors debilitating sport performance. This chapter is further classified as given below.

#### 5.1. Objective

5.2. The need for the development of a psychological intervention strategy

#### 5.3. Theatre as a medium of psychological intervention

5.3.1. Therapeutic use of theatre in ancient times

5.3.2. Theatre as a medium of psychotherapeutic intervention in modern times

5.3.3. Some misconceptions

5.3.4. An exploration in to the theoretical back  
ground

5.3.5. Review of related studies

#### 5.4. The Module

5.4.1. Key concepts of the intervention strategy

5.4.2. Guidelines for group composition and  
environment

5.4.3. The role of the therapist/psychologist

5.4.4. A module for using theatre as an  
intervention in sport

#### 5.5. Epilogue

**Chapter 6:** discusses the results of the studies which  
comprise the entire investigation as follow.

6.1. Study 1: Identification of factors debilitating sport  
performance

6.1.1. Content analysis of the interview

6.2. Study 2: An analysis of factors debilitating sport  
performance.

6.2.1. Relationship of the variables

6.2.2. The influence of sex and nature of sport(skill categories) on sport competition trait anxiety, attitude towards sport injury, and sport aggression

6.3. Study3: Effectiveness of psychotherapeutic use of theatre to control factors debilitating sport performance.

6.3.1. Sport competition trait anxiety

6.3.2. Attitude towards sport injury

6.3.3. Sport aggression

**Chapter 7:** the last chapter summarises the entire work including major findings, conclusions and suggestions for further research.

Chapter 2  
Review of  
Related Literature

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Relevant information regarding the area of the present exploration has been obtained with the help of experts in psychology and sport, related books, journals, sport magazines and newspapers. And this chapter deals with some of the significant reviews categorized as:

- 2.1 Anxiety and Sport
- 2.2 Injury and Sport
- 2.3 Aggression and Sport and
- 2.4 Intervention

## **2.1 Anxiety and sport**

We can think of anxiety as being situation-specific or general in nature. A situation-specific anxiety response to a threatening stimulus is referred to as state anxiety. State anxiety is an immediate emotional state, this is characterized by apprehension, fear, tension, and an increase in physiological arousal. Trait anxiety, on the other hand, is a personality predisposition. It is a predisposition to perceive certain environmental situations as threatening, and to respond to these situations with increased state anxiety (Weinberg & Gould, 1999).

Anxiety has often been linked with the term stress, yet stress is a much broader and more comprehensive term. Stress, like arousal, is a neutral physiological response to some form of stressor- the stressor could be in the form of physical exercise, joyful excitement, or threat to the body- all instances of stress, regardless of their origins, result in identical reactions in the body. As explained by Hans Selye, there are four basic variations of stress. These four are dichotomized as eustress and distress, and as hyperstress and hypostress.

Hyper stress (overstress) occurs when the amount and degree of stress exceeds our ability to adapt to the stress. Conversely, hypo stress (under stress) occurs when we suffer from a lack of sensory stimulation (physical immobility and boredom). The thrill of victory often results in positive Stress, or eustress. Eustress is conceptualized as 'good stress,' and is manifested in form of joy, exhilaration, and happiness. Conversely, distress, or 'bad stress', manifested in the form of tension, anxiety, and worry.

While they are often used interchangeably, arousal, stress, and anxiety are actually independent constructs. While arousal is a non-emotional physiological state of readiness to perform

physically, intellectually, or perceptually, stress is a non-emotional bodily response to an environmental demand. In addition, anxiety is the negative interpretation of past, present and future environmental demands (Wann, 1997).

### **2.1.1. Multidimensional nature of anxiety**

Any psychological test or theory that focuses on only one dimension of anxiety at the expense of others is considered to be unidimensional in nature.

Multidimensional anxiety theory has resulted in a number of inventories that approach anxiety from a multidimensional as opposed to unidimensional perspective. Cognitive state anxiety is the mental component of state anxiety caused by such things as fear of negative social evaluation, fear of failure, and loss of self-esteem. Somatic state anxiety is the physical component of anxiety and reflects the perception of such physiological responses as increased heart rate, respiration, and muscular tension (Martenes, et al., 1990).

### **2.1.2. The measurement of anxiety and arousal**

The measurement of arousal has typically been conducted through the assessment of physiological indicators or through psychological self-report questionnaires. Different approaches have been used extensively; strength and weaknesses are associated with each.

### **2.1.3. Time-to-event nature of pre-competitive anxiety**

Our ability to obtain independent measures of cognitive and somatic state anxiety has greatly enhanced our knowledge about the athletic situation. One of the factors that is believed to significantly influence the quality of the athletic experience is the level of state anxiety during the time leading up to competition. This is referred to as pre-competitive anxiety. We know quite a bit about the temporal changes in anxiety during the period of time leading up to and immediately following the beginning of the event. Pre-competitive cognitive anxiety stands relatively high and remains high and stable as the time-to-event approaches. Conversely, somatic anxiety remains relatively low until approximately 24 hours before the event, and then increases rapidly as the event approaches. Once performance begins,

somatic anxiety dissipates rapidly, whereas cognitive state anxiety fluctuates throughout the contest as the probability of success/failure changes (Cox, 1998).

#### **2.1.4. Anxiety, stress and its sources**

Scanlan and his colleague (Scanlan & Lewthwaite, 1984) investigated intra personal and situational factors related to state anxiety levels of youth sport participants prior to competition. They found that the following were related to higher pre competitive state anxiety levels in youth athletes: higher levels of trait anxiety, lower personal performance expectancies, lower team performance expectancies, lower levels of self-esteem, and greater perceived parental pressure to participate.

A study by Scanlan, et al. (1988) explored the sources of stress reported by former elite figure skaters when participating at the national level. A retrospective interview technique found five major categories of sources of stress: negative aspects of competition, negative significant other relationships, demand/costs of skating, personal struggles and traumatic experiences. So it is apparent that sport competition has become

a major source of stress as anybody can infer the same from media sport coverage.

Ali (2002) Identified stress sources in hockey players. One sixty hockey players were recruited from all India intervarsity hockey championship. Principal component analysis method was used to extract the factors of stress sources. Results revealed that the five factors namely “relational factors” “evaluate expectations,” “personal factor”, “threat” and “maintaining optimum arousal level”; emerged as the sources of stress.

'Relational factor', it has very high loading on items regarding relationship. Relational factor refers to that sources of stress that result from interaction with others. For most players, relationship signifies a special type of goodwill relationship with the audience, and positive affective bonds with teammates, family problems or their opposite. 'Evaluative expectations' show that many players expect positive feelings, attitudes or reinforcement to increase performance. If the others don't satisfy the players needs, it becomes the sources of stress. 'Personal factor' are those that are about the players' concerns about the self and the immediate environment which contributes to their overall stress

sources; included here are fear of injury, new environmental conditions, too much aspirations, arguments with umpires, health worries, problems with the team management and constantly changing rules and regulations.

An exploratory study was conducted by Cohn (1990) to determine the most frequent sources of stress reported by high school golfers and also to ascertain the perceived causes of athlete burnout in golf. A guided interview approach consisting of both open-ended and specific questions related to golfing experiences was used to collect data from 10 high school competitive golfers. A typological analysis of the interviews identified a number of competitive sources of stress for golfers, including playing a particularly difficult shot, playing up to personal standards, and striving to meet parental expectations. All golfers said they had experienced a short period of burnout. Some of the most frequently cited reasons for burnout in golf were, too much practice or play, a lack of enjoyment, and too much pressure from self and others to do well.

Jones et al. (1990) examined situational antecedents of multidimensional competitive state anxiety and self-confidence in

a sample of 125 elite intercollegiate middle distance runners. Cognitive anxiety, somatic anxiety, and self-confidence measured 1 hour prior to performance via the Competitive State Anxiety Inventory-2. Subjects also completed the 19-item Pre-Race Questionnaire (PRQ) which was designed to examine situational antecedents of the competitive state anxiety components. Factor analysis of the PRQ revealed five factors: perceived readiness, attitude toward previous performance, position goal, coach influence, and external environment. Step-wise multiple regression analyses demonstrated that cognitive anxiety was predicted by the first three of these factors. However, none of the factors were found to significantly predict somatic anxiety. Self-confidence was also predicted by two factors, perceived readiness and external environment. These findings suggest that cognitive anxiety and self-confidence share some common antecedents but that there are also factors unique to each.

### **2.1.5. Anxiety and motor performance**

Bera (1999) describes that the study of anxiety on motor performance has become a major topic of interest to sport psychologists and researchers of physical education in recent

years. Over the years, physical education teachers, coaches and athletes have often used less technical terms to define and describe anxiety in competitive athletic situations. Expression such as 'choking', 'psyched up', 'psyched out' 'having butterflies', 'four-0 clock payer' etc. vividly describe the various effects anxiety can have on athletes. Athletes who choke or get psyched out in a competitive sport situation are those who cannot cope with the anxiety that is always present in sport. Sport anxiety is produced mainly by the fear of failure. In sport competition, athletes are not only afraid of losing a contest or scoring fewer points than usual, but not performing as well they had expected too. If athletes become too emotionally aroused before athletic competition, they may experience excessive muscular tensions; this will inhibit their performance rather than enhance it.

Along with the development of techno sports, the psychologists, coaches and athletes have become increasingly aware of the detrimental role that anxiety plays in athletes' performance in competition (Frost, 1971).

State anxiety has a negative effect on concentration and performance improvement. Teachers and coaches should facilitate

task involvement and try to decrease youngsters' anxiety if they want to promote skill learning and motivation, reports Despina (2001).

Schofield et al. (2001) is having the same opinion that anxiety may adversely affect an athletes' well-being and also have an adverse effect on sporting performance.

Collins et al. (2001) used movement kinematics to evaluate change in movement patterns which were associated with changes in anxiety levels. In Study One, 16 trained soldiers completed a stepping task at ground level and at height (20 Meters). In the second study, elite Olympic weightlifters performed the snatch lift under training and competitive conditions. Cross conjugate correlation functions demonstrated changes in movement patterns; soldiers were liable to a more consistent but individually different action when anxious while lifters appeared to use a consciously mediated change in strategy as a result of competitive pressure. Results appear to offer mechanism through which anxiety may act to affect performance.

In the earlier investigation by Weinberg and Hunt (1976), electromyography (EMG) was used to examine changes in

movement efficiency on a throwing task. Anxiety was induced by providing participants with deceptive negative feedback on the accuracy of the throw. In this instance, it was concluded that increases in anxiety were associated with a less efficient movement pattern resulting in greater and longer muscular effort during the throw.

Hamassis and Doganis' (2001) study support the notion that one of the CSAI-2 factors' score (pre-match self- confidence) can be used to predict subsequent overall performance. This finding is in accordance with Burton (1988) who has find a linear relationship between pre-game self-confidence and performance in competitive swimmers. This notion constitutes (CSAI-2) as a very valuable scientific instrument with predictive properties.

Babaian and Roy (1990) conclude in an experimental study of the psychological preparation and psychic state of the national weight lifting team that stress before start is a necessary component for a good result. But it must exist in optimum level. If the nervousness increase the psychological tension transfer into apathy and it would be late to help the athlete. High emotional

arousal violates balance of optimum level of functional system resulting in not achieving the goal.

#### **2.1.6. Sex and cultural difference on anxiety and stress**

In a study with the Sample of 80 volleyball players, Mishra and Sharma (1998) found that all the players felt a higher potentiality of stress than normal view. The male players felt more stress on the work overload aspect which is significantly high than female players. Stress coping ability is higher in female players than male players.

Anxiety is often a critical factor in influencing stressful performance in competitive sports. As we consider competitive anxiety is having two forms i.e. trait anxiety and state anxiety, it is clear that the former is a situation specific modification of the more general anxiety trait construct. Many others have examined the gender and age difference in relation with trait anxiety. In one such study Sukumar and Balakrishnan (2003) measured the competitive anxiety among male and female basketball players in varying ages studying in schools and colleges. Hundred subjects were chosen for the study from school and college basketball players in both sexes. The subject's age of all the four groups in

the sample ranged from 15 to 20 years. Sports Competitive Anxiety Test (SCAT) was administered individually. The analysis of data showed that (i) There is no sex difference in competitive anxiety-trait among the school basketball players, (ii) There is a significant sex difference in competitive anxiety-trait among the college basketball players, (iii) When school and college basketball players were compared on the competitive anxiety trait, no age difference was noted either among females or males. another study reveals that anxiety level is high among the women weight lifters than men lifters and builders (Reddy and Singh, 1990).

The investigators (Sivaramakrishnan, et al., 1999) compared the competitive trait and state anxiety levels among university women volleyball players. To achieve the purpose of the study, 168 volleyball women players who participated in the south-west zone inter university tournament responded to sport competition anxiety test (SCAT) and competitive state anxiety inventory-II (CSAI-II). It was concluded that there was insignificant difference between south and west zone universities on sport competition trait anxiety, somatic anxiety and self confidence. The state Kerala scored highest in trait anxiety and it was significantly high compared to Karnataka, Gujarat and Maharashtra. At the same

time Kerala scored high on self-confidence which was significant as compared to Karnataka.

### **2.1.7. Anxiety and cognition**

A study on the influence of anxiety direction on processing bias was conducted by Eubank and Collins (2000). In the presence of anxiety, threatening stimuli are allocated greater processing priority by high-trait-anxious individuals. As anxiety direction might best account for individual differences, their investigation aimed to establish whether or not such processing priority is a function of anxiety interpretation. Anxiety facilitators and debilitators performed a modified Stroop test by reacting to neutral, positive, and negative word types in neutral, positive, and negative mood conditions. A significant 3-way interaction was evident, with facilitators exhibiting a processing bias toward positive words in positive mood conditions. The data support the contention that anxiety interpretation is an important distinguishing variable in accounting for processing bias and support the potential contribution of cognitive restructuring practices to athletic performance.

Processing efficiency theory predicts that anxiety reduces the processing capacity of working memory and has detrimental effects on performance. When tasks place little demand on working memory, the negative effects of anxiety can be avoided by increasing effort. Although performance efficiency decreases, there is no change in performance effectiveness. When tasks impose a heavy demand on working memory, however, anxiety leads to decrements in efficiency and effectiveness. These presumptions were tested by William et al. (2002) using a modified table tennis task that placed low (LWM) and high (HWM) demands on working memory. Cognitive anxiety was manipulated through a competitive ranking structure and prize money. Participants' accuracy in hitting concentric circle targets in predetermined sequences was taken as a measure of performance effectiveness, while probe reaction time (PRT), perceived mental effort (RSME), visual search data, and arm kinematics were recorded as measures of efficiency. Anxiety had a negative effect on performance effectiveness in both LWM and HWM tasks. There was an increase in frequency of gaze and in PRT and RSME values in both tasks under high v/s low anxiety conditions, implying decrements in performance efficiency. Although anxiety impaired performance effectiveness and

efficiency, decrements in efficiency were more pronounced in the HWM task than in the LWM task, providing support for processing efficiency theory.

Although it has often been implied that self-focused attention plays a mediating role in performance degradation under stress, the assumption that stress will evoke self-focus has received limited empirical support. Two studies were carried out by Liao and Masters (2002) to explore this relationship. The first study, using a time- to-event paradigm, showed that a higher level of self-focused attention accompanied increased anxiety levels in the buildup to competition. In the second study, basketball novices who were instructed to focus on the mechanics of the ball shooting process during practice suffered a significant performance decrement in a subsequent stressful test phase, whereas those who were required only to do their best during practice showed no degradation in performance. It was concluded that self-focused attention may be increased in response to psychological stress, and that the negative effect of self-focused attention on performance under stress is likely to be magnified by learning the skill under a high degree of self-focused attention, which can result in an over awareness of the performance process.

Kaul and Bedi (2002) investigated the relationship between the positive (PPF, positive, thinking, positive attitude and positive affect) and negative psychic energy (NPE, negative thinking, negative attitude and negative affect) and perceived stress before competitions. Seventy seven elite athletes attending national camps in boxing, judo and wrestling participated in this study. It was hypothesized that there would be a positive relationship between NPE and trait anxiety and between NPE and perceived stress. Results obtained supported the hypotheses. It was further observed that high PPE athletes were significantly lower on trait anxiety as compared to high NPE and low PPE athletes. High NPE athlete were found to be significantly higher on trait anxiety and perceived stress as compared to low NPE athletes.

#### **2.1.8. Anxiety and achievement orientation**

An enquiry by Swain and Jones (1992) studied the relationship between the sport achievement orientation and cognitive anxiety, somatic anxiety, and self confidence in a sample of male track and the field athletes. Subjects responded to the Competitive State Anxiety Inventory-2 (CSAI-2) on five occasions during the pre-competition period and also completed the Sport

Orientation Questionnaire (SOQ). Stepwise multiple regression analyses were employed in order to define whether any of the SOQ subscales emerged as significant predictors of the CSAI-2 subscales scores. The dominant predictor to emerge for each anxiety subcomponent was the competitiveness subscale. The subjects were then dichotomized into high and low groups of competitiveness by means of median-split technique. Two way ANOVA revealed significant group by time- to-competition interactions for both cognitive and somatic anxiety. In the case of cognitive anxiety, the high competitive group exhibited no change across time; the low competitive group showed a progressive increase as the competition neared. Findings for somatic anxiety revealed that the low competitive group reported an earlier elevation in the somatic response. Significant main effects of both time -to- event and group (but no interaction) were found for self-confidence. The findings revealed that the high competitive group, although reporting higher levels of self-confidence throughout the experimental period, reported reduced self-confidence on the time of competition; in the low competitive group, self-confidence remained stable. These results suggest that the pre competition

temporal patterning of the multidimensional anxiety subcomponents differ as a function of competitiveness.

#### **2.1.9. Anxiety and game location**

Greenless and Voyce (2001) unraveled the influence of games location on collective efficacy beliefs, anxiety and mood states. The results of a study indicates that prior to home games individuals experience lower levels of the mood states, fatigue, depression, and lower levels of both cognitive and somatic anxiety. In addition they experience higher levels of self-confidence and have higher levels of collective efficiency.

#### **2.1.10. Anxiety and sport behaviour**

Bhadana (2002) assessed the relationship between the factors influencing the sports career and psychological variables such as anxiety (cognitive and somatic), self-confidence, adjustment and achievement in state level sports men. The sample of the study consists of 72 male players. The results of the study revealed that practice as an internal control factor has significant positive relationship to self-confidence in state level sportsmen. Luck, as external factor influencing sports career was significantly related to somatic anxiety and adjustment revealed that

sportsmen who were highly dependent on luck for sports program have more somatic anxiety and less adjustment qualities. Influence of high-ups also an external factor having also as an external factor having positive relationship to cognitive anxiety, having negative relationship to self-confidence and also having negative relation to adjustment. External control factors (total) influencing the sports career having positive significant relationship to anxiety (cognitive and somatic) also having negative significant relationship to adjustment in state level sportsmen.

#### **2.1.11. Anxiety/stress and body temperature**

The results of the study by Milojevic and his colleagues (2001) could be explained by the fact that systematic practice influences the regulations of blood pressure and heart rate. Because of this, those measures become less sensitive to competition stress, which is not the case with body temperature. Body temperature is one of the most important measures of the integrity of competition stress.

#### **2.1.12. Controlling and coping anxiety and stress**

Johnston and McCabe (1993) examined the efficacy of approach and avoidance strategies for coping with stress

experienced during sports performance. Subjects were 90 undergraduate female students whose ages ranged from 17 years to 40 years. The approach task was to putt ten golf balls along an 'S' shaped path to reach a target hole. The avoidance task was to putt ten golf balls into an easy target while music and noise was playing to distract subjects from the task. Subjects were trained in either approach (mental rehearsal) or avoidance (attention focus) strategies. The relationship between approach and avoidance coping strategies, the nature of the task, the appraisal of perceived demand and perceived capability, and performance was examined. Some evidence was found to support the classification of stressful transactions as requiring either an approach or an avoidance strategy. The use of the appropriate strategy enhanced perceived capability and improved performance. Evidence was also found to support the conceptualization of stress as an appraised imbalance between perceived demand and perceived capability. These results suggest that the training and use of an appropriate strategy can lower stress and enhance the performance of people in a sporting situation.

Coping with events that elicit anxiety and other unpleasant feelings is integral to participation in competitive sport. A study

by Gaudreau et al. (2001) compared pre-competitive, and post competitive coping responses of athletes in order to find if they changed across the phases of a competition. Results indicated that utilization of increased effort, wishful thinking, active coping/ planning, suppression of competition activities, seeking social support, and behavioral disengagement changed across the phases of the competition. Between phases correlation were also examined and revealed a moderate stability of individual differences across phases of the competition. Despite some limitations, results supported both the process-oriented and coping style approaches of coping and showed the importance of multiple assessment of coping to capture its complex and dynamic nature during competitive encounters.

Autogenic program used as an intervention in their (Lee and Bheem, 2001) experiment to reduce cognitive anxiety. The results indicate that the efficacy of the autogenic training programme to reduce somatic anxiety and to enhance self-confidence

Prapavessis and his colleagues (1992) used a single-subject research design to test the effectiveness of a cognitive-behavioral intervention in reducing state anxiety and improving sport

performance. The subject was a small-bore rifle shooter who suffered from high levels of competition-related anxiety. Initially, self-report, physiological, and behavioral measures of baseline state anxiety were obtained during competition. A 6-week intervention program was then implemented. This program included training in relaxation, thought stoppage, refocusing, coping statements and biofeedback. An opportunity to practice using these procedures in competition was provided. Measures of state anxiety and performance were then obtained in a second competition. Results revealed that cognitive anxiety, somatic anxiety, gun vibration, and urinary catcholamines decreased whereas self-confidence and performance increased from baseline to treatment.

### **2.1.13. Physical activity and anxiety/stress**

O'Connor et al (2000) present a selective overview of recent research concerning physical activity, anxiety and anxiety disorders. Major conclusions include that exercise training is associated with a reduction of anxiety symptoms in patients with panic disorder.

Focht and Hausenblas (2001) examined psychological responses of 50 young women following single episodes of aerobic exercise (AE) performed in a naturalistic exercise setting and quiet rest (QR). Given the salience of self-presentational qualities in a naturalistic exercise setting, a secondary purpose was to examine whether psychological responses to acute exercise varied as a function of social physique anxiety (SPA). The dependent measures of state anxiety, positive engagement, revitalization, tranquility, and physical exhaustion were assessed immediately prior to and then at 5 and 31 minutes following each condition. It was found that (a) AE and QR were associated with decreases in state anxiety and increases in tranquility; (b) AE was associated with increases in positive engagement and revitalization; and c) these changes did not vary as a function of SPA level.

## **2.2 Injury and sport**

One of the many aspects of sport in which sport psychologists may become involved is that of dealing with the psychological concerns often experienced by athletes who suffer physical injuries. It is critical to the ultimate goal of recovery and return to competition that athletes are indeed rehabilitated both

physically and psychologically. Yet most coaches, athletic trainers, and athletes lack both knowledge and skill concerning psychological rehabilitation. It is up to sport psychologists or qualified sport psychology consultants to provide information to injured athletes and/or other sport medicine team members that will help athletes in their psychological recovery from physical injury.

Athletic injuries may sometimes be anticipated even before they actually are incurred. As reported by several authors, there is some evidence to indicate that psychosocial factors, in addition to physical factors, play a role in the occurrence of sports injuries (Feltz, 1984; Rotella & Heyman, 1986). These factors include risk-taking behavior, anxiety, major and minor stresses, and personality traits.

As coaches will attest, some athletes are more likely than others to take risks, whether through high-risk sports such as parachuting, fencing, or rock climbing or by purposely putting themselves in potentially injurious situations (Cohen & Young, 1981).

### **2.2.1. Sport injury and anxiety**

Anxiety is another psychosocial factor that is viewed as related to both physical and psychological injury (Feltz, 1984). As a trait or stable personality characteristic, anxiety may manifest itself to the point that athletes are quite anxious in most life situations. Anxiety levels of athletes sometimes reflect a state, or transient, component, and as such result from factors such as the fear of physical contact or harm, and the importance of the game or the situation within the game. It is also possible that high levels of anxiety in sport may be characteristic of those athletes who are considered to be injury prone.

Gordan's (1986) opinion is that injury-prone athletes in fact do seem to be insecure and highly anxious or worried, and thus in a sense may induce their own injuries.

State anxiety-related problems such as inappropriate or impaired attentional focus or increased muscle tension seem likely to contribute to such a pre-dispositional of injury (Williams & Andersen, 1986). For example, with increased stress the visual field of athletes may narrow so much that they do not perceive the necessary danger signals. On the other hand, an increase in

muscle tension beyond the desired readiness levels could lead to musculo-skeletal injuries such as muscle strains (Nideffer, 1980).

Perhaps the primary psychosocial factor that has been investigated with respect to its relationship with athletic injury is that of life stress (Feltz, 1984; Rotella & Heyman, 1986). Events such as a change of school or home, death of a friend or family member, or trouble in academic or athletic performance may be perceived as psychologically stressful by athletes. Deutsch (1985) gives an example of this in describing his clinical work with a 34-year-old injured racquetball player. The patient reported that he sprained his ankle because he was "pressing too hard on the courts, probably because I'm having troubles at home".

Bramwell, et al. (1975) developed a scale the Social and Athletic Readjustment Rating Scale (SARRS), in order to measure the role of psychosocial factors unique to athletics. In a research investigation using SARRS, they found that the number of life changes an individual experienced was a predictor of football injuries. However, Williams and Andersen (1986) reported that "minor daily hassles," or day-to-day stressors, have been found to predict the incurrence of an injury perhaps as well as do major life

stresses. The key point is that coaches, athletic trainers, and sport psychologists should try to be aware of the minor as well as the major stressors that athletes are experiencing and thus identify those who might be at risk for injury (Rotella & Heyman, 1986).

For over 20 years, a number of studies have suggested that stressful life events can increase the risk of disorders ranging from common health complaints to life-threatening diseases such as cancer and heart disease (Sklar & Anisman, 1981). Stress also has been shown to increase the risk of dangerous behavior or pernicious lifestyles that can lead to accidents or substance abuse. At the same time, researchers have linked psychosocial stressors such as marital discord, financial distress, and relationship crises with increased incidence of injuries, illness, and poorer performance in athletes (Davis, 1991).

May et al. (1985) studied members of the U.S. Alpine Ski Team and found numerous medical and performance problems among the athletes who reported much turmoil in their personal lives, feelings of depression, or life dissatisfaction.

In another study Blackwell and McCullagh have reported that American football players are more likely to be injured when

they experience more change and upheaval in their lives such as marriage, divorce, school graduation, financial difficulties, changes in personal habits, and so forth.

Likewise, stressful life events have been reported to be correlated with increased injuries in gymnasts (Kerr & Minden, 1998), in a combination of athletes from biathlon, race walking, figure skating, gymnastics, and basketball (May, et al., 1985), and in a combination of high school athletes from football boys' and girls' basketball, boys' wrestling, and girls' gymnastics (Smith, et. al., 1990).

Hardy and Riehl (1988) looked for the stress/injury relationship in non-contact sports. They noted that the football studies focused on male athletes while the volleyball study included female athletes. They argued that females cope better with many of the stressors commonly assessed in previous studies including financial difficulties, marital problems, death of a spouse. By employing a modified survey and creating separate scores for different life experience, they were able to detect stress/injury effects in a combination of athletes from baseball, softball, tennis, and track. It should also be pointed out that

female gymnasts comprised the entire sample of 41 subjects in the Kerr and Minden (1998) research of a non contact sport, which again found the link.

Currently, majority of the studies support the anxiety/injury relationship.

### **2.2.2. Sport injury and personality**

Although the research literature suggests a relationship between injury and personality. Several studies that have addressed this relationship have produced equivocal results. Feltz (1984) is of the opinion that these inconsistent findings may be due to methodological and conceptual problems. For example, the appropriateness of the personality tests administered has been questionable and sample sizes have often been less than adequate.. Further study is advocated to evaluate the existence of this link and any possible predictive value that personality variables might have toward injury occurrence (Cohen & Young, 1981).

The implication of examining the psychosocial factors associated with athletic injury is that social support systems such as those provided by coaches, athletic trainers, and sport

psychologists can help athletes recognize their personality, anxiety and risk-taking patterns. These support systems can also assist athletes in readjusting and coping with life changes and stresses in an attempt to minimize vulnerability to injury (Feltz, 1984).

### **2.2.3. Sport injury and social support**

Researches indicate that social support can contribute to health and well-being by reducing exposure to stress and enhancing coping efforts. The mechanisms underlying this relationship remain poorly understood. However, a confusion abounds as to the nature of social support. Bianco and Eklund's (2001) paper examines some of the major conceptual issues relevant to the study of social support in the context of sport injury.

Social support, which in the broadest sense refers to social interactions aimed at inducing positive outcomes, is growing as an area of interest in the literature on sport and exercise, particularly where sport injury is concerned. Generally, research in this area has focused on the role of social support in both the etiology of sport injury and recovery from sport injury. For example, Soulard (2001) found that Family and friends were more associated with

emotional support while coaches and team mates with technical support. The knowledge gained from these endeavors has both theoretical and practical implications for sport scientists. Specifically, research findings can elucidate psychosocial issues associated with sport injury and guide the development of injury-prevention strategies and psychosocial rehabilitation interventions (Bianco & Eklund, 2001)

#### **2.2.4. Sport injury and psychological response**

The extent of psychological injury that athletes experience along with physical injury varies greatly with the personal attributes of the athletes themselves and the context within which physical injury occurred. For example, the psychological characteristics of athletes vary in such areas as level of self-esteem, trait anxiety, and intrinsic motivation. All of these factors likely affect their response to injury and the rehabilitation process. In turn, various situational factors such as the nature and extent of injury, type of sport, time, and the perceived context of the injurious situation (e.g., a cheap shot vs. an accidental collision) also may influence an athlete's reaction to injury (Pedersen, 1986; Weiss & Troxel, 1986).

McDonald and Hardy (1990) examined the affective response pattern of severely injured athletes. Five athletes were followed within 24 hours of injury for 4 weeks. On two nonconsecutive days a week at the same time and place, the athletes completed the Profile of Mood States and indicated their perceived percent rehabilitation. In addition, at the first meeting, the athletes were given the Marlowe-Crowne Social Desirability Scale and a demographic data sheet. At the final meeting, the athletes completed an open-ended questionnaire designed to explore affective, cognitive, and behavioral reflections about rehabilitation. Correlations for each affective measure and perceived rehabilitation indicated that affective patterns of the rehabilitating athlete were highly related to the perception of rehabilitation, with negative affect diminishing and positive affect increasing as perceived rehabilitation increased.

Jhonson and Lindwall (2001) report case studies of one rower and one handball player for predicting sport injuries using profile of mood states. The study indicates some interesting results but it also demonstrates methodological problems in conducting predictive studies using mood variables in the case of the sport injuries. An increased understanding of the possible

influence of psychological parameters on injury propensity might lead to better preventive measures through early detection and intervention.

#### **2.2.5. Prevention and rehabilitation of sport injury**

MacMahon and White (2001) say that a better understanding on the part of the athletes of sources of pressures relating to risk, pain and injury will help them rise their awareness of these pressures and their ability to resist them.

Green (1992) comments on the use of imagery in rehabilitation of injured athletes. From a sport psychology perspective, there is at the very least a logical leap from their relationship between imagery and sport performance to the impact of imagery on the healing process of injuries.

Hecker and Kaczor (1988) have summarized existing theoretical models that have been advanced to explain the processes involved with mental imagery and its influence on athletic performance (e.g., motor skill development). These include (a) the symbolic learning theory, which posits that symbolic rehearsal advances the development of skills requiring cognitive processes; (b) the psycho neuromuscular theory associated with

Jacobsen's work which identified muscular innervations during imagery similar to those occurring during actual performance; (c) the attention-arousal set, which integrates cognitive and physiological aspects of rehearsal in order to distinguish between relevant and irrelevant cues (d) bioinformational theory, in which imagery processes the stimulus characteristics of an imagined scenario and the physiological/behavioral responses that accompany them.

### **2.3 Aggression and sport**

The term aggression is used in several ways in sport and exercise. We speak of "good" aggression (e.g., going after a loose ball in volleyball or lowering the shoulder in a drive toward the basket) and "bad" aggression (e.g., taking a cheap shot in soccer or committing a flagrant foul in basketball). The term seems to draw automatic associations and produce positive or negative value judgments and emotional responses (Gill, 1986). However, most aggressive behaviour in sport and physical activity settings appears not to be inherently desirable or undesirable but to depend on interpretation. Two people watching a particular hard but clean check in ice hockey might disagree whether the hit was

good or bad aggression. Actually, aggression is easier to talk about if the good-bad dichotomy is avoided and instead viewed it neutrally - as a behaviour to be understand (Gill, 1986).

### **2.3.1. Criteria for aggression**

Psychologists define aggression as “any form of behaviour directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment” (Baron & Richardson, 1994). In examining this and similar definitions, four criteria of aggression emerge (Gill, 1986): a. It is a behavior, b. It involves harm or injury, it is directed toward a living organism, and it involves intent,

Aggression is physical or verbal behaviour: It is not an attitude or emotion. Aggression involves harm or injury, which may be either physical or psychological. Finally, aggression is intentional. Accidental harm, even unintentionally shooting someone, is not aggressive when harm was not intended.

So, when sport psychologists discuss aggression in general they are referring to what many people would call "bad" aggression. What may people call examples of good aggression in sport (e.g., charging the net in tennis) are labeled assertive

behaviors in sport psychology - that is, playing within the rules with high intensity and emotion but without intention to do harm.

### **2.3.2. Hostile aggression, instrumental aggression and assertiveness**

An inspection of the aggressive actions of athletes reveals that players behave violently for a variety of reasons. Silva has classified the forms of aggression found in athletics. 'Hostile Aggression' refers to aggressive actions motivated by anger that have the intend and goal of harming another person (or object). A second form of aggression is 'instrumental aggression' which refers to aggressive action intended to harm another person with the goal of achieving a result other than the victim's suffering, such as victory in an athletic context. This form of aggression is not motivated by anger and a desire to hurt another individual rather, the aggressive act is a means to an end. 'Assertiveness' is a third category of behaviour with relevance to aggression in sport. 'Assertiveness' is the use of legitimate force and strategy to achieve a goal. Unlike actions defined as aggressive, the intend to harm is absent from assertive behaviours. The key difference between assertive and aggressive behaviours is that assertive behaviour lie

within the legal bounds of the game while aggressive behaviours do not (Wann, 1997).

Most aggression in sport is instrumental, such as: a. a wrestler's squeezing an opponent's ribs to create discomfort and turn him over, b. a cornerback is delivering a particularly hard hit to a receiver to deter him from running a pass route across the middle of the field, or a basketball coach's calling a time-out when an opposing player is on the foul line, trying to cause psychological discomfort (heightened state anxiety) and poor performance.

Of course, hostile and instrumental aggression both involve intent to injure and harm. Although most sporting aggression is instrumental, that does not make it acceptable. Professionals in sport and exercise science must have a philosophy that is well thought-out as to what is acceptable assertive behaviour and unacceptable instrumental aggressive behaviour. (Weinberg & Gould, 1999).

#### **2.3.4. Causes of aggression**

Why are some children more aggressive than others? What causes some athletes to lose control? Are aggressive individuals

born, or are they a product of their environment? Psychologists have advanced four important theories regarding causes of aggression: (a) instinct theory; (b) frustration-aggression theory; (c) social learning theory; and (d) revised frustration-aggression theory. A brief description of each of these theories as follows.

### ***Instinct theory***

There is widespread belief that aggressive behaviour is a manifestation of instincts. Freud proposed that destructive tendencies are an inherent part of the total structure of human beings (Thirer, 1993). According to the instinct theory (Gill, 1986), people have an innate instinct to be aggressive that builds up until it must inevitably be expressed. This instinct can either be expressed directly by attacking another living being or displaced through catharsis, in which aggression is released or "blown off" through socially acceptable means such as sport. Thus, for an instinct theorist, sport and exercise play an extremely important function in society in that they allow people to channel their aggressive instincts in socially acceptable ways.

### ***Frustration-aggression theory***

The frustration-aggression theory, sometimes called the drive theory, states simply that aggression is the direct result of a frustration that occurs because of goal blockage or failure. Most aggressive acts are committed when people are frustrated. For example, when a soccer player feels she has been illegally held by her opponent, she becomes frustrated and takes a swing at the defender. However, this view has little support today because of its insistence that frustration must always cause aggression. Research and experience repeatedly show that people often cope with their frustration or express it in non-aggressive ways.

Frustration-aggression theorists counter that aggressive responses that occur are not always obvious: they may get channeled through socially acceptable outlets such as competitive contact sports. Thus, like instinct theorists, frustration-aggression proponents view catharsis as playing a major role. However, little evidence exists of catharsis in sport. Consequently, there is also little evidence that frustrated, aggressive participants in contact sports lower their aggression levels through participation (Gill, 1986). In fact, in some instances they become more aggressive.

Despite its shortcomings, the frustration-aggression hypothesis has contributed a valuable awareness of frustration 's role in the aggression process.

### ***Social learning theory***

Social learning theory explains aggression as behaviour people learn through observing others who model particular behaviours, followed by receiving reinforcement for exhibiting similar actions. Bandura (1977) found that children who watched adult models commit violent acts repeated those acts more than children not exposed to such aggressive models. These modeling effects were especially powerful when the children were reinforced for copying the actions of the adult models.

Sport psychologists and sport sociologists have studied ice hockey because of the pervasiveness of illegal aggressive actions. Smith (1978) found that the violence prevalent in the professional game is modeled by young amateur players. In fact, aggression is valued in ice hockey, and players quickly learn that being aggressive is a way to gain personal recognition. Many coaches, parents, and team mates accept and reinforce these aggressive acts. Young hockey players watch their heroes on television

modeling aggressive behaviour and later they receive reinforcement for exhibiting similar behaviour.

Social learning research in sport shows that most athletes are not taught to be blatantly violent. However, aggression can and does occur in every sport. A figure skater, for example, may attempt to psych out an opponent and make upsetting remarks, such as "I heard that the judges said a costume like that is illegal this year." This is a subtler example of aggression, but the intent still is to harm another. Most parents and coaches do not condone unprovoked attacks on others, yet aggression is often sanctioned in response to another's aggressive act.

Social learning theory has considerable scientific support. It emphasizes the important role that significant others have on the development or control of aggression, since modeling and reinforcement are the key ways people learn aggressive behaviour.

### ***Revised frustration-aggression theory***

A revised frustration-aggression theory combines elements of the original frustration-aggression hypothesis with social learning theory. This widely held view holds that although frustration does not always lead to aggression, it increases the likelihood of

aggression by increasing arousal and anger (Baron & Richardson, 1994). However, increased arousal and anger only result in aggression when socially learned cues signal the appropriateness of aggression in the particular situation. If the socially learned cues signal that aggression is inappropriate, it will not result.

According to this model, first, the individual becomes frustrated in some way, perhaps by losing the game or playing poorly. Then increased arousal, usually in the form of anger or pain, results from the frustration. Aggression will not automatically result, and increased arousal and anger lead to aggression only if the individual has learned that it is appropriate to be aggressive in such a situation. Thus, a football safety who is frustrated after being badly beaten on a deep pass pattern for a touchdown might lash out at his opponent if his coaches have previously tolerated this behaviour. The strengths of the revised frustration-aggression theory are that it combines the best elements of the original frustration-aggression and the social learning theories and uses an interactional model (the individual's level of arousal anger within the context of socially learned environmental cues) to explain behaviour.

### **2.3.5. Aggression in sport: special considerations**

Not only have sport psychologists tested theories of aggression in the sport setting, but they have also examined other important issues. There are three of the other important issues: (a) spectators and aggression, (b) game reasoning and aggression, and (c) athletic performance and aggression. Each of these is discussed below.

#### ***Spectators and aggression***

Competitive sport differs from many activities in that it is usually conducted in the presence of fans and spectators. Fans at games and matches are not usually passive observers - they actively identify with their teams. Their involvement is usually well mannered and supportive, but instances of fan violence appear to be on the rise. In response to concerns about fan violence, sport psychologists have studied spectator aggression.

Psychologists first tested the catharsis theory to determine whether fans become more or less aggressive after watching sport events. In general, they found that observing a sporting event does not lower the level of the spectator's aggression. Moreover, watching some violent contact sports actually increases a

spectator's readiness to be aggressive. However, aggression usually does not occur without other environmental or game-related factors. For instance, studies of hockey spectators have found that fan aggression is more likely with younger, disadvantaged male spectators in crowded conditions and under the influence of alcohol. Regarding the relation between spectator aggression and player aggression, the authors (Weinberg & Gould, 1999) suggest that the coaches and players should maintain emotional control on the field to ensure they are not triggers for fan aggression.

### ***Game reasoning and aggression***

An alarming research finding is that many athletes view some aggressive acts as inappropriate in general but appropriate in the sport environment. For example, fighting is deemed appropriate in certain sport situations (e.g., if a pitcher intentionally beans another player), whereas no form of fighting would be tolerated in the school band. This double standard is called game reasoning. Unfortunately, people are learning and believing it is okay to be more aggressive in sport than in other life contexts. This presents a problem. First, aggression carries the

risk of injury and harm. Also, sport can and should serve to teach children how to behave appropriately inside and outside of sport. Allowing (or applauding) aggressive behaviour in sport sends the wrong message to children. Sport professionals must specifically define appropriate behaviour and make clear that any form of aggression not sanctioned in society is also inappropriate in sport (Weinberg & Gould, 1999).

### ***Aggression and athletic performance***

Some coaches and athletes feel that aggressiveness enhance athletic performance, either at the team or individual level. Certainly, the relation between aggression and performance is complex, and there have been many cases where aggressive acts have "paid off" regarding outcome. For example, the strategy of having a lower skilled player commit aggressive acts against a higher-skilled opponent to distract the superior player or draw him into a fight.

Some sport psychologists agree that aggression facilitates performance outcome (Widemeyer & Birch, 1984), whereas others feel it does not (Gill, 1986). The research is difficult to interpret

because clear distinctions have not been drawn between aggression and assertive behaviour.

Wann (1997) discusses a more reasonable relationship between sport aggression and performance in a closer look. He quotes some relevant studies to support the notion that aggression will be detrimental to athletic performance. Firstly, as the athletes focus their attention toward harming their opponent, their attention to the task at hand suffers. The result of the reduced attentional focus is a decrement in performance. Secondly, the arousal accompanying the display of aggression may push the athlete beyond his optimal level. Again, the result is a reduction in performance. Sound recreational and athletic programs under good leadership may bring about a healthier mental attitude and a less hostile frame of mind (Frost, 1971).

Nagykaldi (2001) is having the opinion that public understanding of aggression in sport, especially in combat sports is often completely erroneous. People perceive wrestling, boxing, judo and others as a roughness, even in tennis they perceive the so called net play and the use of powerful overhand shots as aggressive behavior. This is a fatal error. He concludes with a

great deal of confidence that assertivity in sports and aggressivity are two different psychological characteristics. The assumption of aggressivity in combat sports and over simplification and reduction of sport activity in general to aggression lead to improper and false generalization.

Aggression in all sport has become an area of concern for the public and professionals most obviously in contact sports such as rugby and ice hockey. For many people playing these sports, aggressive acts are seen a prerequisite for success at an elite level. This has been considered problematic in that it is assumed that it produces undesirable models for beginning players (Brown and Howe, 2001).

Research is limited in the area and weakly supports the position that aggression may create anger and arousal and therefore interfere with player concentration and affect performance negatively (Cox, 1998). However, the evidence is confused often because there is still disagreement about what constitutes aggressive play.

Few studies have attempted to examine this distinction between aggressive and assertive behavior. Indeed, there are

surprisingly few studies in the area of aggression and most of these have attempted to determine the effectiveness or lack of aggressive acts to produce positive results. Representative of studies, Wankle (1978) found no difference in the amount of aggressive penalties and winning and losing teams in university hockey. Similarly, Widemeyer and Birch (1984) found no significant relationships between aggression and team performance outcome.

In one study, Coulomb and Pfister (1998) examined factors of hostile and instrumental aggression in soccer games and showed that hostile aggression was more prevalent in the second half of games and that instrumental aggression was more frequent in the first half. Further, they showed that teams at higher level showed greater frequencies of instrumental aggression than hostile aggression. They suggested that experienced players used instrumental aggression more often because cognitive processes are involved, and the players learn to use instrumental aggression at the right time and place in order to improve their chance of winning.

### **2.3.6. Aggression and game location**

McGuire and his colleagues (1992) investigated whether player aggression mediated the relationship between game location and performance in professional ice hockey. Based on the subject-defined delineation between aggressive and no aggressive ice hockey penalties established by Widmeyer and Birch, 13 measures were used on data collected from the official game reports and penalty records of the National Hockey League. Both macro analytic and micro analytic research strategies and analyses were employed. Initial analysis revealed that home teams won 58.3% of the decided games. Further analyses showed a significant interaction between game location and performance. Home teams incurred more aggressive penalties in games they won whereas visiting teams incurred more aggressive penalties in games they lost.

### **2.3.7. Legitimacy judgment of aggressive behavior**

Legitimacy judgment concerning aggressive behavior in sport is inversely related to moral reasoning. Several researchers have suggested that participation in sport may be detrimental to moral reasoning, but a causal relationship has yet to be determined. The

primary purpose of Gardner and Janelle's (2002) investigation was to compare perceptions of aggressive and assertive behavior in sport and non-sport situation among male and female athletes and non-athletes. Participants were randomly selected and grouped according to three sport contact groups based on their athletic experience: high, low and non-athlete. All participants viewed 28 clips of aggressive and assertive behavior in a sport and non-sport situation. Volunteers were asked to judge the legitimacy of the behavior and to rate the acceptability of the behavior. Results indicated that males perceived the behavior in both situations as more legitimate, behavior in athletic-situations was rated as more legitimate. These results reinforce previous findings about the relationship between gender, context, moral reasoning and legitimacy judgments of aggressive behavior.

#### **2.3.8. Aggression and sex difference**

Mathew and Ram (1999) explored the role of some demographic variables like sex, religion and marital status in the experience and expression of anger. For this, data collected from 115 males and 165 females, were subjected to t-tests. Results showed that males scored significantly higher on state-anger, an

emotional state marked by a subjective feeling that varies in intensity, and anger-out, refers to the extent to which an individual expresses anger toward other people or objects in the environment, than females.

Pyari et al. (2001) tried to understand the frustration reactions of adolescent players. Sixty boys and sixty girls, who have participated in five games at national level, were selected for sample. The findings of the results show that sex play an important role in frustration reaction of student players, while responding to the stressful situation, socio-economic status and interaction effect of sex and socio-economic status found insignificant.

### **2.3.9. Directions of aggression**

Directions of aggression were studied by Gupta and Agarwal (2000) among children with reference to cognitive style. A sample of 50 boys and 50 girls at the age level of 9 to 14 years was selected by stratified random sampling technique. Witkin's group embedded Figure Test and the Indian Adaptation of Rosenweig's P-F Study (Children's form) were used. Results were found that in field-dependent children, aggression was more turned out

environment (extrapunitive) and by the subject upon himself (intropunitive) than field-independent children. Field-independent children evaded their aggression (impunitive) more in an attempt to gloss over the frustration than field-dependent children.

### **2.3.10. Controlling aggression**

In an attempt to foster assertiveness of sport persons, Connelly and Rotella (1991) discuss issues and strategies related to teaching social assertiveness skills to athletes. Social assertiveness is examined as a key ingredient for effective communication and athlete satisfaction. The proposed specific strategies are for teaching assertiveness skills to groups and individuals including applications to various sport settings. The authors suggest that education and positive reinforcement throughout the season are necessary if progress is to be made. Aggressive behaviors must be eliminated while appropriate assertiveness skills are strengthened. Assertiveness training is not a cure-all for all group cohesion or coach/athlete communication problems in sport. Athletes must accept responsibility by being willing to practice the appropriate communication skills. Coaches must understand and make time for the process.

## **2.4 Psychological interventions**

Although the primary goal of sport psychology interventions is the enhancement of performance, athletes, coaches and sports psychologists may use intervention strategies for other reasons as well. There are a number of methods for regulating the anxiety and arousal, and to increase self-confidence, imagery skills, attention control as well as comprehensive programme designed to enhance psychological skills. Certain intervention strategies used to assist injured athletes.

### **2.4.1. The regulation of arousal and anxiety**

"The anxiety matching hypothesis" implies that cognitive intervention strategies will be most effective and should be used with the individuals experiencing problematic levels of cognitive anxiety, while somatic intervention strategies will be most effective and should be used with individuals experiencing problematic levels of somatic anxiety (Wann,1997).

In his search with athletes from a variety of competition levels and sports, Crocker (1992) was able to identify strategies used by athletes to manage their anxiety. As the study shows the most common strategies involved self blame and the active coping,

while the least common strategies involved seeking social support and practising self control. Researchers distinguish between active coping strategies and passive coping strategies. The former is preferable because this strategy reflects attempts to change, alter, or remove the stressor, thereby reducing or eliminating its impact. The active and problem focussed tactics reflect active coping strategies while the passive coping strategies reflect attempts to deal with or manage the anxiety in a temporary manner without confronting the stressor itself. In Crocker's research, the obvious examples of passive coping strategies were wishful thinking and daydreaming.

Sport psychologists have developed several techniques designed to reduce anxiety experienced by athletes. Many of these techniques fall under the general heading of relaxation training. These techniques are designed to lower somatic and cognitive anxiety. Progressive relaxation, biofeedback, and meditation are the common relaxation training strategies used in sport.

Progressive relaxation is a technique originally developed by Jacobson. It involves the systematic tension and relaxation of muscle groups in an attempt to reduce anxiety. Biofeedback

involves the use of instruments that monitor autonomic process, there by allowing individuals to develop some control over these processes. Biofeedback instruments can monitor several different biological processes including heart rate, blood pressure, respiration rate, skin temperature, muscles and brain waves.

Meditation is a relaxation training technique that has been in use for thousands of years. It involves the use of mental forces to calm the body. Although there are many different forms of meditation, most forms share several commonalties (Wann, 1997).

Another strategy used to combat anxiety is called Stress Management Training (SMT). Through SMT programmes individuals learn about stress in general as well as their own personal tendencies and reactions to stressors. As a result, individuals can identify events and situations that typically lead to anxiety and learn to relax and control their anxiety. Wann (1997) gives an account of Smith's SMT programme for sport. This programme contains five phases.

First phase in Smith's programme is the pretreatment/assessment phase. During this phase, the sport psychologist and athlete discuss the athlete's typical reactions to stressful events,

attempting to identify events leading to the highest levels of anxiety. The second phase is the treatment rationale phase. This is the educational section of the programme, athletes receive information about anxiety in general and typical responses to anxiety. The third phase of the programme labelled as the skill acquisition phase, involves training the athletes to cope with stress and anxiety in a positive manner. Essentially, participants are trained in the use of active coping strategies. This involves training in two separate but related areas, muscle relaxation and cognitive restructuring. As for the muscle relaxation training athletes receive progressive relaxation training. With regard to cognitive restructuring, athletes are taught to identify self-defeating negative and irrational thought. Specifically, athletes are trained in the art of positive self-talk. The fourth phase is the skill rehearsal phase. In this portion of the programme, the athlete practises the muscle relaxation and cognitive restructuring skills learned in the previous phase. The last phase, called the post treatment evaluation phase, involves analysing the effectiveness of the STM programme. The evaluation can be used to highlight portions of the programme that should be deleted, altered or enhanced.

Another programme designed to help athletes cope with anxiety is Anshel's COPE model. This model is a cognitive behavioural strategy for coping with acute sport anxiety that focuses on controlling emotions, organising input, planning the next response, and executing the response. Techniques such as relaxation exercises and SMT are designed to assist athletes with chronic levels of anxiety, whereas the COPE model focuses on acute stressors, that is, stressors that temporary (Wann, 1997).

#### **2.4.2. Psyching-up strategies**

For some athletes the problem is not detrimentally high levels of anxiety or arousal but rather a lack of these states. For these athletes to improve performance, sport psychologists and consultants must increase the athlete's level of anxiety and arousal prior to competition. Strategies and techniques designed to increase an athlete's anxiety/arousal are referred to as 'psyching-up strategies'. These strategies are designed to increase somatic anxiety, but not cognitive anxiety, to optimal levels.

### **2.4.3. Athletic injury management**

Psychological interventions are a vital component of an athlete's recovery from injury. Without psychological intervention athletes are unlikely to obtain a speedy and optimal recovery.

Injury interventions involve two distinct steps. First, the psychologist must complete a clear and precise assessment of the psychological ramification of the injury. Second, based on the assessment, psychologists can recommend and begin implementing a player-specific psychological intervention programme. A number of interventions are available for use with injured athletes including proactive intervention strategies, social support, modelling, goal setting and imagery (Wann, 1997).

### **2.4.4. Other interventions**

Other interventions designed to facilitate athletic performance include self-confidence building imagery, attention control training and comprehensive programmes designed to improve psychological skills. As with most psychological traits, athletes vary in their degree of self confidence.

Some athletes possess an optimal level of self confidence, a trait associated with successful performance. These players have a realistic view of their athletic ability. Athletes who are optimally self confident are usually able to handle mistakes in a positive manner. They try to learn from their mistakes, using mistakes as an indication of limits of their ability. Other benefits of self-confidence include better concentration and positive emotional reaction.

There are several intervention strategies designed to adjust an athlete's self-confidence to an optimal level. These interventions may be especially important for young athletes because these participants are still developing their athletic confidence (Wann, 1997).

Although the primary goal of sport psychology intervention is the enhancement of performance, athletes, coaches and sport psychologists may use intervention strategies for other reasons as well. For e.g., anxiety control tactics may increase personal well-being and satisfaction. Similarly injury management strategies/ interventions used to help athletes deal with their injuries. Ample

empirical works support the efficacy of such psychological intervention plans, some of them are cited below.

The belief that self-talk is related to sport performance is pervasive. A series of studies with coaches of different sports from different countries has shown that encouraging athletes use positive, as opposed to negative, self-talk is perceived to be one of the most frequently used and effective coaching strategies (Gould, et al., 1989).

Definitions of self-talk are not well established in the sport psychology literature, perhaps because the different types of self-talk seem intuitive, or perhaps due to confusion from the variety of operational definitions and exemplars of self-talk used across studies. For example, positive self-talk has been described as congratulatory self-statements (Hanton & Jones, 1999), affirming self-statements (Elko & Ostrow, 1991), observed behaviors such as fist pumps, and unspecified positive self-statements (Van Raalte, et al., 2000; Hardy, et al., 2001).

Using a sample of 440 college-age men and women, Conroy & Metzler's (2004) study examined the relationship between defined patterns of state-specific self-talk (while failing, while

succeeding, wished for, and feared) and three forms of situation-specific trait performance anxiety: fear of failure (FF), fear of success (FS), and sport anxiety (SA). Distinct patterns of self-talk were associated with competitive anxieties in sport; the strongest effects were associated with FF and SA, in that order, whereas FS was more weakly associated with systematic patterns of self-talk. These results are consistent with cognitive theories of anxiety and can be used to inform assessments, diagnoses, and treatments of performance anxiety problems in sport.

Athletes, coaches, and sport psychologists also emphasize positive self-talk as a tool for reducing anxiety and enhancing performance (Gould, et al., 1992).

Some authors (Beilock, et al., 2001) examined the impact of suppressive imagery (i.e., trying to avoid a particular error), the frequency of this suppression, and attempts to replace negative error-ridden images with positive ones on golf putting performance. The findings suggested that frequent application of suppressive imagery hurts performance.

Mental practice has been defined as "the symbolic rehearsal of a physical activity in the absence of any "gross, muscular

movements". Imagery is defined as a conscious experience using all the senses to create an experience in the mind .In the case of motor imagery, the absence of normal precursors would refer to the actual movements. Thus, during motor imagery, which is a more specific form of mental practice, it is expected that the sensations present would be similar to those found during the execution of the skill. One study by Slade et al. concerned with understanding the mechanism by which mental practice or motor imagery enhances motor performance. Based on literature which suggests that electromyogram (EMG) activity during imagery may be due to expectancy effects, it was also hypothesized that EMG activity would be greater during imagery for those who were aware of the predictions of inflow explanations than for those who were unaware of those predictions. Results did not support the mirroring hypothesis (e.g., the psychoneuro muscular theory), as the pattern of increased activation during imagery did not reflect that observed during the real movement.

Research by Madden et al. (1989) found that active coping was common strategy for athletes, particularly those experiencing exceptionally high levels of stress. However, contrary to Crocker's (1992) work, these studies found that seeking social support was

a common factor, indicating that it may be an important personal coping strategy for athletes.

The proponent of Rational Emotive Behaviour Therapy (REBT), Albert Ellis applies the same perspective to motivation and to begin and continue regular exercise or sport involvement. A basic premise, according to Ellis, is that exercise and sport avoidance is usually motivated by low frustration tolerance and or irrational fears of failing. The treatment of exercise and sport avoidance by REBT is multimodel and integrative and involves the use of cognitive (e.g. learning rational coping self-statements), emotive (e.g. shame attacking exercise) and behavioural (e.g. operant conditioning) methods. REBT focuses on helping exercise and sport avoiders find their inability demands and change the demands into healthy preferences while promoting conditional self acceptance (Ellis, 1994).

Martin and Hall (1995) determined whether subjects who used mental imagery would spend more time practising a golf putting task and would have higher task specific self efficacy than would controls. Thirty nine beginner golfers were assigned to either an imaginary treatment conditions (performance plus

outcome imagery or performance imagery) or a no imagery (control) condition. During the first three sessions all subjects were taught how to put a golf ball. Imagery treatment subjects also participated in an imagery programme designed for the golf putting task. Subjects in the performance imagery group spend significantly more time practising the golf putting task than did controls. Subjects who used imagery also set higher goals for themselves, had more realistic self expectations, and adhered more to their training programmes outside of the lab.

Anshel et al. (2001) inquired the use of coping strategies between male and female Israeli athletes according to approach and avoidance coping construct. A significant strategy by gender instruction indicated that genders differed in their use of approach and avoidance coping strategies following selected stressors.

Explanations regarding how emotions arrive and how they affect us are provided, based on a cognitive appraisal model, by Botterill and Brown (2002). Consideration is also given to the automatic nature of emotional responses. An emotional inoculation intervention was outlined, with recommendations for

harnessing one's emotions for adaptive functioning and high performance.

Raudenbush et al. (2001) conducted an interesting study which extends past research by assessing how the administration of peppermint odour affects actual athletic task performance. Forty athletes undertook a series of physical tasks under conditions of no-odour or peppermint odour. The peppermint odour conditions resulted in increase in running speed, handgrip strength, and number of push-ups, but had no effect on skill related tasks such as basketball free throw shots. The implications are particularly salient in regard to enhancing athletic performance using a non-pharmacological aid and as an adjunct to athletic training utilising olfactory stimulation.

To conclude with a different perspective of sport psychology, one article by Ravizza (2002) is quoted.

Influenced by Zen and Hatha Yoga philosophy with its emphasis of letting go of control and transcending the ego so that the performer can become totally immersed in the performance, Ravizza (2002) has outlined an applied sport psychology philosophy for consulting. It is based on educational and

existential principles. The athlete is related to the total person. The consultant is concerned with the person and not just the athlete portion of his/her being. The philosophy advocated is grounded in existential philosophy with freedom of choice and responsibility for the consequences of the decisions made resting with the athletes. An important aspect of his philosophy is to have the athlete establish a mission or something to strive towards. Another aspect of existential philosophy is the importance of the present focus that is required to enhance performance.

Chapter 3  
**Method**

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“Research is a systematic activity that is directed towards discovery and the development of an organized body of knowledge” Best and Kahn (1995). The researcher usually has a choice of research designs, methods of observation, methods of measurement, and types of analysis. All of these must be congruent; they must fit together (Kerlinger, 1996). Broad objectives of the present study are: 1. To identify and explore the psychological factors debilitating sport performance and 2. To formulate a psychological intervention strategy to control those debilitating factors. To meet these objectives three separate but interlinked studies were conducted as given below.

3.1 Study 1: Identification of psychological factors debilitating sport performance

3.2 Study 2: An exploration of psychological factors debilitating sport performance.

3.3 Study 3: Effectiveness of psychotherapeutic use of theatre to control factors debilitating sport performance.

As the purposes of these studies vary, different methodologies were adopted for each study. This chapter gives

details regarding description and design of each study, comprised of properties of the sample on which the studies were conducted, procedure of administration and data collection, and finally the statistical treatments made use for interpreting the data.

### **3.1 Study 1: Identification of Psychological Factors Debilitating Sport Performance**

#### **3.1.1. Objective**

To identify the psychological factors debilitating sport performance using interview method.

#### **3.1.2. The sample**

The sample comprised of coaches, physical educators, and sport persons from various disciplines all over Kerala. Sample were selected using convenient sampling method. Altogether 62 subjects were interviewed for the study. Sample break up based on their roles in sport is given in table 3.1.

**Table3.1**

Sample break up of the subjects based on their roles in sport

	Number of interviewees	Number of interviewees in percentage
Coach	22	35.48
Sport person (athlete)	30	48.39
Physical educators	10	16.13
Total	62	100

**3.1.3. Type of interview**

Structured interview method was used for collecting information.

**3.1.4. Interview schedule**

Interview schedule consisted of only one open-ended question, “what are the most common psychological factors debilitating sport performance?”

**3.1.5. Fixing up of the interview**

Fixing up of the interview includes a prior agreement between the interviewees and the interviewer in terms of the date, time, and place of interview. For this the interviewer contacted

each subject in advance and had a personal conversation to fix up the above said aspects in order to assure sufficient motivation and cooperation of the subject.

### **3.1.6. Actual interview**

Actual interview was conducted by the interviewer on the fixed up time and date. First of all rapport was established. Comfortable seating was arranged, and as far as possible external distractions were minimized. Awareness about the different aspects of the concerned topic was made and the confidentiality of the information was assured.

### **3.1.7. Middle phase**

In this phase, the interviewer discussed each point with the interviewee to elicit the responses. Doubts by the respondents were attended and clarified.

### **3.1.8. Concluding phase**

In this phase, more personal information about the subjects were discussed. The respondent was allowed to suggest further opinion about the concerned topic.

### **3.1.9. Recording of responses**

During the interview, the interviewer recorded the responses of each interviewee. In the present interview, verbal recording was used.

### **3.1.10. Reliability**

The reliability of the collected information was observed by keeping consistency in dealing with different subjects.

### **3.1.11. Validity**

Validity of the interview is dependent upon all the steps in methodology. So each step was done with great care. Face validity of the interview schedule was assured by consulting some experts of the area concerned.

### **3.1.12. Analysis of the data**

Responses of all the subjects were tabulated and descriptive statistical procedures like frequency and percentage were used to summarize the data.

## **3.2 Study 2: An Exploration of Psychological Factors Debilitating Sport Performance**

### **3.2.1. Objective**

1. To study the relationships among factors debilitating sport performance such as: sport competition anxiety, attitude towards sport injury, and sport aggression.
2. To study the influence of sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression.

The method followed in the present study is described under the following heads:

- 3.2.2. The Sample
- 3.2.3. The tools used
- 3.2.4. Data collection procedure
- 3.2.5. Scoring and tabulation
- 3.2.6. Statistical techniques used



### **3.2.2. The Sample**

Stratified sampling method (Kothari, 1998) has been employed to select the sample. The sample consisted of 132 sport

persons, which has been drawn from various schools, colleges, sport schools and physical education centers from all over Kerala.

As the population consisted of different sub groups the following strata were considered while selecting the sample.

***Sex: male and female***

Adequate representation of male and female sport persons was ensured in the sample. The sample break up based on sex is presented in table 3.2.

**Table 3.2**

Sample break up based on sex

Sex	Number of subjects	Number of subjects in percentage
Male	66	50
Female	66	50
Total	132	100

***Nature of sport: open and closed skill categories***

The total sample consisted of sport persons belong to different sport categories according to the nature sport. All kind of movements (sport) are performed in some environment, whether it is a tennis court, an open field, or with, or without other people or

equipment. The simplest skill, in terms of environmental constraints imposed on the performer is a *closed skill*. A closed skill is one that is done in a predictable environment, or one in which the performer is free to execute a skill without having to make quick decisions that would be required if unexpected changes occurred. Examples of closed skill include a javelin throw, a high jump, a springboard diving, and weight lifting. When a skill is performed in response to an unpredictable, changing environment, it is called an *open skill*. Examples of open skills include those done in response to the unpredictable action of an opponent or situation as encountered in wrestling or in responding to a football free kick. In situations such as these, the perception and quick decision-making abilities of the performer may well be more important for success than the isolated biomechanical features of the skill performance. Though most of the sport disciplines include open and closed skills, it can be divided into closed and open skill category in accordance with the predominance of a particular category. Thus open skill category includes cricket, football, hockey, kabaddi, softball etc. where as disciplines like athletics, archery, rowing, shooting, swimming, etc are included in the closed skill category.

Sample break up based on nature of sport is given in table 3.3.

**Table 3.3**

Sample break up based on nature of sport

Nature of sport	Number of subjects	Number of subjects in percentage
Open skill	66	50
Closed skill	66	50
Total	132	100

### **3.2.3. The tools used**

In the absence of adequate tools, the investigator had to develop scales for measuring sport competition anxiety, attitude towards sport injury, and sport aggression. (Details of test construction are given in the chapter IV). For the present investigation, the investigator used the following tools.

#### **3.2.3.1. Inventory for Sport Competition Anxiety (ISCA, Santhosh and Jayan, 2003)**

This scale was developed for the present study by Santhosh and Jayan (2003) to measure Sport Competition Trait Anxiety. The scale measures two dimensions of anxiety viz., cognitive trait anxiety and somatic trait anxiety.

### ***Reliability***

The Pearson Product Moment correlation coefficient for test-retest reliability of the scale, 'Inventory for Sport Competition Anxiety' (ISCA) is found to be 0.93 (N=35). Reliability of cognitive anxiety and somatic anxiety are found to be 0.79 and 0.83 respectively.

### ***Validity***

For establishing concurrent validity, 'Inventory for Sport Competition Anxiety' (ISCA) was correlated with SCAT (Sport Competition Anxiety Test, Martenes, 1990). The concurrent validity of ISCA is found to be 0.68 (N = 83), while the correlation coefficients between subdomains of ISCA and SCAT are 0.42 and 0.57 for cognitive and somatic dimensions respectively. (A copy of the scale is given as appendix II).

#### **3.2.3.2 Sport Injury Attitude Scale (SIAS, Santhosh and Jayan, 2003)**

This scale was developed for the present study by Santhosh and Jayan (2003) to measure attitude towards sport injury. The scale is in the negative direction of the attitude, the higher the

scores on SIAS the higher the negative attitude of the subject towards sport injury.

### ***Reliability***

The Pearson Product Moment correlation coefficient for test-retest reliability of the scale, 'Sport Injury Attitude Scale' (SIAS) is found to be 0.86 (N=35).

### ***Validity***

The content validity of the scale, Sport Injury Attitude Scale (SIAS) was assured by experts in the field. The criterion related validity of Sport Injury Attitude Scale (SIAS) was calculated by correlating the SIAS scores with the frequency of occurrence of actual sport injury. The tetrachoric correlation (Reddy, 2002) between the same is found to be 0.43. The estimated value is moderate, however, it should be noted that the scores on the scale is not a prediction of actual injury but a correlation between a negative attitude towards sport injury and the frequency of occurrence of sport injury so that the estimated value is good enough.

The construct validity of the scale was estimated by the correlation of the scale with 'Inventory for Sport Competition Anxiety' (ISCA), which is found to be 0.72, and the correlation between SIAS and cognitive component of sport anxiety is 0.47, whereas the correlation between SIAS and somatic component of sport anxiety is found to be 0.36. These values are quite significant. (A copy of the scale is given as appendix III).

### **3.2.3.3. Inventory for Sport Aggression (ISA, Santhosh and Jayan, 2003)**

This scale was developed for the present study by Santhosh and Jayan (2003) to measure Sport aggression. The scale measures two types of aggression viz., instrumental and hostile aggression.

#### ***Reliability***

Test-retest reliability established for the scale Inventory for Sport Aggression (ISA) using Pearson Product Moment correlation coefficient is 0.87 (N=35).

#### ***Validity***

For establishing concurrent validity, Inventory for Sport Aggression (ISA) was correlated with Sport Aggression Inventory

by Kumar and Shukla (1993). The Pearson product moment correlation between ISA and SAI was found to be 0.71(N=83). The correlation coefficients between the subdomains of ISA i.e. instrumental and hostile aggression and SAI are found to be 0.44 and 0.67 respectively.

The criterion related validity of Inventory for Sport Aggression (ISA) was estimated considering the number of occurrences of aggressive behavior by the subjects during sports performance. The tetrachoric correlation coefficient between the scores on ISA and the number of sport aggressive behavior was found to be 0.52. (A copy of the scale is given as appendix IV ).

#### **3.2.3.4 Personal Information Schedule (PIS)**

In addition to the variables measured the investigator developed a personal information schedule in order to collect the data regarding the relevant variables such as sex, age, discipline, educational qualification, district, and name of school/college. (A copy of Personal Information Schedule (PIS) is given as appendix I).

### **3.2.4. Data collection procedure**

A programme was charted carefully by the investigator. After obtaining the prior permission from the concerned authority the investigator visited the institutions. A self-introduction and a rapport with sport persons were established. The investigator administered the tools one by one to the subjects in groups consisting of 5-15 sport persons. The sequence of the administration of the tools was: 1. Personal Information Schedule (PIS), 2. Inventory for Sport Competition Anxiety (ISCA), 3. Sport Injury Attitude Scale (SIAS) and 4. Inventory for Sport Aggression (ISA).

After completion, the answer sheets were collected back and checked for omissions and those found to be incomplete were eliminated

### **3.2.5. Scoring and tabulation**

For all the three inventories, viz. Inventory for Sport Competition Anxiety (ISCA), Sport Injury Attitude Scale (SIAS), and Inventory for Sport Aggression (ISA), the same method of scoring was used. Positive and negative items as well as different dimensions were scored separately. Items measuring particular

dimension positively and responded as “strongly agree”, “agree” “undecided”; “disagree” and “strongly disagree” were given the scores of 5, 4, 3, 2 and 1 respectively. And the items measuring particular dimension negatively and responded as “strongly agree” “agree”, “undecided”, “disagree” and “strongly disagree” were given the scores of 1,2,3,4 and 5 respectively.

The scores were tabulated for the purpose of analysis and interpretation.

### **3.2.6. Statistical techniques used**

The major statistical techniques used were:

#### **3.2.6.1. Pearson Product Moment Correlation**

Pearson Product Moment Correlation was used to find out the correlation coefficient between any two variables (interval or ratio type). Generally, the value of ‘r’ ranges from -1 to +1. In present investigation the relationships among the variables sport competition anxiety, attitude towards sport injury, and sport aggression were established using Pearson Product Moment Correlation.

### **3.2.6.2. Two-Way ANOVA**

Two-Way Analysis of variance was used to study the effects of two independent variables separately (their main effects) and together (their interaction effects) on one dependent variable. In the present investigation, separate Two-Way Analysis of variance were employed to find out the independent and interaction effects of the variables, sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression.

### **3.3. Study 3: Effectiveness of Psychotherapeutic Use of Theatre to Control Factors Debilitating Sport Performance**

#### **3.3.1. Objective**

To test the efficacy of newly developed intervention strategy to control factors such as sport competition anxiety, attitude towards sport injury and sport aggression that debilitate sport performance.

The method followed in the present study is described under the following heads:

- 3.3.2. The Sample
- 3.3.3. Research design
- 3.3.4. The tools used
- 3.3.5. Procedure
  - 3.3.5.1. Pre-intervention assessment
  - 3.3.5.2. Intervention
  - 3.3.5.3. Post-intervention assessment
- 3.3.6. Scoring and tabulation
- 3.3.7. Statistical techniques used

### 3.3.2. Sample

As the present investigation is an intervention study, the sample selection was performed by several stages. In the first stage, 83 sport persons in a physical education institution in Malappuram district were selected using convenient sampling method. The sample break ups are given in tables 3.3 and 3.4.

#### ***Sex: male and female***

Adequate representation of male and female sport persons was ensured in the sample. The sample break up based on sex is presented in table 3.4

**Table 3.4**

Sample break up based on sex

Sex	Number of subjects	Number of subjects in percentage
Male	46	55.42
Female	37	44.58
Total	83	100

#### ***Nature of sport: open and closed skill categories***

Adequate representation of open and closed skill category sport persons were ensured in the sample. Sample break up based on nature of sport is given in table 3.5.

**Table 3.5**

Sample break up based on nature of sport

Nature of sport	Number of subjects	Number of subjects in percentage
Open skill	42	50.60
Closed skill	41	49.40
Total	83	100

In the second stage, three inventories were administered to assess sport anxiety, negative attitude towards sport injury, and sport aggression of the entire sample. Thus, three groups of sport persons(83 each in each group) based on three variables were formed. The descriptive statistics of the variables measured are given in table 3.6.

**Table 3.6**

Mean and standard deviation of the scores on the variables sport competition anxiety, attitude towards sport injury and sport aggression

Variables	Mean	SD
Sport competition anxiety	48.12	8.74
Attitude towards sport injury	37.93	8.64
Sport aggression	39.24	8.74

All the three groups were classified as high, average and low based on mean and standard deviation of the scores on the inventories. One standard deviation above the mean was considered as 'above average' and one standard deviation below the mean was considered as 'below average' while the middle group as 'average'. The 61 subjects, who scored 'above average' on at least one of the variables, i.e. factors debilitating sport performance, were further considered for the intervention. Since the 'above average' group is highly heterogeneous, all the 61 subjects were further grouped into seven according to the number of problems present in each subject. The criterion characteristics of the groups were 'above average' on all the three variables, 'above average' on any of the two variables and 'above average' on any one of the variables. The groups identified along with the number of sport persons in each group are given in table3.7.

**Table 3.7**

The groups identified and the number of sport persons in each group

Number	Combination of variables							Total
	A	B	C	A+B	B+C	A+C	A+B+C	
Number of sport persons identified	9	4	5	9	11	6	17	61
Number of sport persons selected	4	4	4	4	4	4	4	28

A, denotes sport competition anxiety

B, denotes attitude towards sport injury

C, denotes sport aggression

As shown in table 3.7, four subjects each (total is 28) representing their corresponding groups were selected according to the similarities of variables' distribution. From the selected 28 subjects, 14 of them were assigned to experimental group and 14 of them to control group. For this two subjects, each from the selected sub groups were randomly assigned to experimental group. This procedure made the experimental and control group homogenous ensuring the representation of selected sub groups (table 3.7).

### **3.3.3. Research design**

The objective of the study was to test the efficacy of newly developed intervention strategy to control factors such as sport competition anxiety, attitude towards sport injury and sport aggression that debilitate sport performance. For the present purpose an experimental design was proposed. A 'Before Match-After-Design' served the purpose. In this, a before observation was made with a specific intend of using the data to match the experimental and control subjects. The advantage of this design is the greater reduction in between group variability before the treatment

### **3.3.4. The tools used**

For the present purpose, the investigator used the following tools.

- 3.3.4.1. Inventory for Sport Competition Anxiety (ISCA, Santhosh and Jayan, 2003)
- 3.3.4.5 Sport Injury Attitude Scale (SIAS, Santhosh and Jayan, 2003)
- 3.3.4.6 Inventory for Sport Aggression (ISA, Santhosh and Jayan, 2003)
- 3.3.4.7 Personal Information Schedule (PIS).

The statistical properties of all the three scales are detailed in study 2.

### **3.3.5. Procedure**

After obtaining prior consent from the concerned authority, the investigator visited the institution. A self-introduction and the rapport with sport persons were established. The investigator administered the tools one by one to the subjects in groups consisting of 10-15 sport persons. The sequence of the administration of the tools was 1. Personal Information Schedule (PIS) 2. Inventory for Sport Competition Anxiety (ISCA) 3. Sport Injury Attitude Scale (SIAS) and 4. Inventory for Sport Aggression (ISA).

After completion, the answer sheets were collected back and checked for omissions and those found to be incomplete were eliminated. This was the procedure for the first stage of the sample selection in which 83 sport persons were assessed to identify those subjects who were 'high' on debilitating factors.

#### **3.3.5.1. Pre intervention assessment**

The present study included pre and post intervention assessments of both the control and experimental groups on the

variables concerned. As the subjects for intervention were selected on the basis of their scores on three inventories measuring three debilitating factors, the same scores were considered as the before intervention status of the subjects (control and experimental groups) on the concerned variables viz., sport competition anxiety, attitude towards injury, and sport aggression.

### **3.3.5.2. Intervention procedure**

After assigning the subjects to treatment and control conditions, the members of the experimental group were gathered to meet the experimenter as per the prior information.

The intervention was conducted on the experimental group following the stages and steps of the module prepared earlier (chapter 5 discusses the development of the module based on theatre techniques). As per the module, there are three precise stages for conducting the intervention and each of the stage comprises of different steps.

#### **STAGE 1 - PREPARATION AND PLANNING**

As the intervention was intended to achieve certain goals, proper preparation from the part of the investigator was needed

for enhancing the effectiveness of the programme. Adequate planning of the entire programme is required, for the programme is a group activity and the investigator had to understand the characteristics of the group along with the participants' needs and abilities.

**Step-1      *Assessment of the abilities and needs of the target group***

The investigator had to understand the current status of the problem on the group. For the present investigation three factors debilitating sport performance such as sport competition anxiety, negative attitude towards sport injury and sport aggression were measured using standardized psychological inventories.

**Step-2      *Specification of the goal of the program***

Before devising strategies to be included in stage 3, the goals of the intervention were specified. For the present purpose the goals of the intervention were:

1. To eliminate sport competition anxiety and to practice strategies to cope with competition anxiety

2. To eliminate negative attitude towards sport injury so as to develop a positive attitude, and
3. To eliminate sport aggression and to cope with sport situations where anger is felt.

### **Step-3    *Planning of the problem specific strategies***

The implementation of the intervention i.e. stage 3 depends upon the goal of the intervention. All the nine steps involved in stage 3 were in congruent with the objectives of the programme.

## **STAGE 2 - EDUCATION**

### **Step-1    *Educating the participants about the programme***

The topics of discussion included different aspects of debilitating factors, the goal of the intervention programme and the mode of administration. All the doubts of the participants were cleared and the active participation of the subjects were ensured.

### **Step-2    *Scheduling sessions***

The number of sessions, timings and venue of the programme were discussed with the participants. In accordance with their convenience, the number of sessions was fixed as seven,

duration of each session as 90 minutes in average. The venue was located near to the institution after getting consent from the authorities concerned.

Thus each of the sessions started at 2pm. The completion of seven sessions required seven days i.e. one session per day.

### **STAGE 3 - INTERVENTION**

Intervention included 8 distinctive but interrelated steps. Each step had its own functions to be accomplished. So that the sequence of the steps was maintained for the total effect.

#### **Step-1     *Tuning***

Each session started with tuning. To enhance the involvement of the participants, a positive mental set was created using the method called 'tuning'. For this purpose, four lines of a song was recited by a participant which was followed by the rest of the group. The participants arranged themselves so as to form a circle and closed their eyes before commencing the song. The meaning of song was capable of suggesting positive attitude and optimism.

## **Step-2     *Arousal inducing***

As the participants are initially not active, they need to be alert and vigorous for the maximum involvement and free expression. For this purpose the investigator used simple exercises to warm up the participants. The investigator gave instructions to move randomly on the field in tune with the rhythm of clapping. The speed of the rhythm was continuously varied, some times at the peak and some times with pauses. All the participants moved freely according to the variations of the rhythm. Whenever necessary verbal and non-verbal prompting were used to create an involvement of the participants. This procedure helped the investigator to have a proper control over the participants as well.

## **Step-3     *Making the group suggestive***

The group was made suggestive by employing a simple auditory sensitization technique. The participants were asked to form a circle by themselves. They sat on the floor, closed their eyes followed by three deep breaths. They were suggested to listen to the sounds around them. As far as possible they tried to identify

each of them. Each of the participants' involvement was checked by ensuring responses to certain simple questions.

#### **Step-4      *Cohesion improvement***

As it is need for the group work; group cohesion is improved by an activity named 'good afternoon game'. In this, the investigator asked the participants to form a circle. One member of the group invited to the center of the circle to whom rest of the members had to wish mutually. Thus each of the participants had the opportunity to be the center of attraction.

#### **Step-5      *Improvisations***

A truly theatre technique, is the means of free expression, makes the participants affluent in their thinking, creative in expression. The themes for improvisation were indirectly related to sport competition anxiety, attitude towards sport injury and sport aggression. For improvisation fourteen members of the group were divided into seven pairs and each of these pairs were assigned three themes to perform. The themes included 'anxiety', 'responses to physical harm', and 'aggression'. Each of the themes was presented one by one by each of the pairs. At the time of performance the rest of the group members acted as viewers. At

the end of this session all the participants gathered together to discuss about the nuances of each participant. This step enabled the entire group to be free in their expression.

### **Step-6     *Problem acting out***

As the objectives of the intervention include the reduction of the sport anxiety, negative attitude towards sport injury and sport aggression, each of these problems was addressed separately. In the problem acting out session, first of all the participants were asked to identify a most anxious situation in their sport life. Each of the participants was encouraged to experience the same as far as possible, which was expressed freely in front of the rest of the group members. Like wise all the participants acted out the most adverse experiences regarding sport injury and sport aggression one after another. At the end of this session participants tried to share and analyse their experiences with the help of investigator.

### **Step-7     *Key experience acting in***

This step is contingent upon the specific needs of the participants. Keeping all other stages and steps intact, step- 7 may be reconstructed to fit in to the special needs of the subjects. In the present intervention, the 'key-experience method' was used

in tune with the problems targeted. The key-experience is a desirable experience, which is just opposite to the problem experience. For example, a competition situation facilitates the experience of negative emotion i.e., anxiety, (problem experience) which is expected to replace with positive emotion i.e., confidence (key-experience).

Forming a circle, with closed eyes the participants were tried to recall the most favorable experience, which filled with confidence that promoted sport performance in a competition situation. This experience was identified as key experience of the corresponding individual. The identified key experience of the individual was developed using free expression of the body, 'acting in'. Thus the key-experience was internalized. Demonstrations of the implementation of key-experience in various sport situations were also performed and practiced by each of the participant. The key-experience method was employed to deal with other two debilitating factors such as negative attitude towards sport injury and sport aggression. The aim of step-7 was to practice key-experience so as to enable the subject to recall and re-experience the key-experience at his/her wish. At the end of this session the differences between problem experience and key-experience were

analysed and discussed on the basis of cognitive, affective, and behavioral aspects. Practice of key-experience was extended to 30 days, however, the actual intervention programme guided by the investigator consisted of seven sessions.

### **Step-8     *Exit***

As the session was started with a formal technique of tuning, the winding up of the session was also formalized. For this the same procedure for the step-1(tuning) was repeated. This step helped the participants to be aware of their exits from therapeutic experience and subsequent entrance into their day today life with a new perspective.

### **Step-9     *Evaluation and follow-up***

The effectiveness of the program was evaluated by the participants with the help of therapist.

The above-mentioned nine steps were administered in a single session. The same procedure was followed for the all seven sessions.

### **3.3.5.3. Post intervention assessment**

After seven days intervention the participants of the experimental group practiced the specific strategies to cope with problem situations for 30 days. As per the prior information, all the participants of the intervention and the members of the control group were gathered. The investigator administered three psychological inventories measuring sport competition anxiety, attitude towards sport injury and sport aggression according to the standard procedure as performed for the pre test.

### **3.3.6. Scoring and tabulation**

For all the three inventories, viz. Inventory for Sport Competition Anxiety (ISCA), Sport Injury Attitude Scale (SIAS), and Inventory for Sport Aggression (ISA), the same method of scoring was used. Positive and negative items as well as different dimensions were scored separately. Items measuring particular dimension positively and responded as “strongly agree”, “agree” “undecided”; “disagree” and “strongly disagree” were given the scores of 5, 4, 3, 2 and 1 respectively. And the items measuring particular dimension negatively and responded as “strongly agree”

“agree”, “undecided”, “disagree” and “strongly disagree” were given the scores of 1,2,3,4 and 5 respectively.

The scores were tabulated for the purpose of analysis and interpretation.

### **3.3.7. Statistical techniques used**

**t-Test:** t-Test is a test of the statistical significance if the results of a comparison between two group means. In the present investigation, t' Test was used to estimate the significance of mean difference between the experimental and control groups before and after treatment.

Chapter 4

# Test Construction

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#### **4.1 Objective**

To develop and standardize sport specific inventories to measure 1. Sport competition anxiety, 2. Attitude towards sport injury, and 3. Sport aggression.

#### **4.2 Need for the new inventories**

The investigator was able to trace out a few inventories assessing the variables under study, but all of them have been constructed in English. As the entire sample is from Kerala State and all the subjects' mother tongue is Malayalam, The investigator had to develop three new inventories in Malayalam language. Moreover, the geographical, social and cultural aspects of English speaking countries are very distinct that would definitely influence the as well as the items of the inventories. So that the investigator was forced to give up the idea of developing Malayalam adaptation of the existing inventories in English.

The methodologies adopted to develop and standardize three separate sport specific inventories in Malayalam were same.

### **4.3 Description of the variables measured**

#### **4.3.1. Sport competition anxiety**

The inventory is intended to measure sport competition trait anxiety. Anxiety can be situation-specific or general in nature. A situation-specific anxiety response to a threatening stimulus is referred to as state anxiety. Trait anxiety, on the other hand, is a personality predisposition. It is a predisposition to perceive certain environmental situations as threatening, and to respond to these situations with increased state anxiety. Two major dimensions of anxiety, the mental component and the physical component are measured separately by the present inventory.

Cognitive trait anxiety is the mental component of trait anxiety caused by such things as fear of negative social evaluation, fear of failure, and loss of self-esteem.

Somatic trait anxiety is the physical component of anxiety and reflects the perception of such physiological responses as increased heart rate, respiration, and muscular tension.

#### **4.3.2. Attitude towards sport injury**

The inventory is intended to measure negative attitude towards sport injury. An attitude is defined as the pre disposition

to respond in a particular manner towards the aspects of environment. Here the negative pre disposition to respond to sport injuries is measured. Attitude has three major components as cognitive, affective, and behavioral components. All of these three aspects related to sport injury are considered.

### **4.3.3. Sport aggression**

Aggression is defined as an overt verbal or physical act that can psychologically or physically injure another person or oneself. It has been further described as hostile aggression where the “primary goal is the injury of another human being” or instrumental aggression “the intent is to harm another but the goal is to realize some external goal”.

## **4.4 Item construction**

The success of a psychometric test depends largely upon the construction of effective and objective items of which it is composed. In order to reduce overlapping among items, it was decided to write items dimension wise. For eliminating the semantic style variance the terms like 'often', 'usually' and 'sometimes' were avoided.

For sport competition anxiety, it was decided to write 24 items on each of the two dimensions, i.e. cognitive and somatic anxiety. In this way, the total number of items written was 48

For the variable 'Attitude towards sport injury', a total number of 45 items were written regarding the different components of attitude, i.e. cognitive, affective, and behavioural components.

Regarding the different types of aggression i.e. instrumental and hostile aggression, 24 items for each sub variables were written on sport aggression.

In order to ensure that the items of the scale were intelligible and explicit, they were written in such a way that they could be comprehended by individuals having even moderate knowledge of Malayalam language. Similar words or sentences from one item to another were avoided. It was also kept in view that the scale may not be a lengthy one and that it takes only a reasonable time in its completion. Responses on the items were elicited in terms of 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree' (5 - point Likert scale).

An initial tryout of the scales was done on a group of 24 sports persons (12 males 12 females). The Scale was administered in individual session. Subjects were encouraged to point out the vagueness, if any, in the items. Such items, which were vague, were either dropped or suitably modified in the light of suggestions of most of the subjects. After this initial tryout, the remaining items were found distributed in different dimensions as shown in table 4.1

**Table 4.1**

Distribution of items among different dimensions after initial try out: Inventory for Sport Competition Anxiety (ISCA)

Dimension	Total items written	Number of items retained	Number of items dropped
Cognitive anxiety	24	19	5
Somatic anxiety	24	17	7

**Table 4.2**

Distribution of items after initial try out: Sport Injury Attitude Scale (SIAS)

Variable	Total items written	Number of items retained	Number of items dropped
Attitude towards injury	45	35	10

**Table 4.3**

Distribution of items among different dimensions after initial try out: Inventory for Sport Aggression (ISA)

Dimensions	Total items written	Number of items retained	Number of items dropped
Instrumental aggression	24	19	5
Hostile aggression	24	21	3

#### 4.5 Sample

The scale was administered on a sample of 468 sport persons for the purpose of items analysis. The sampling technique employed was stratified random sampling (Kothari, 1999). Sample was drawn from different colleges, sport schools and sports training centers in Kerala. The age range of the subjects was from 15 years to 35 years. Sample break up based on different strata are given below (table 4.4 & 4.5).

**Table 4.4**

Sample break up based on sex

Sex	Number of subjects	Number of subjects in percentage
Male	253	54.06
Female	215	45.94
Total	468	100

**Table 4.5**

Sample break up based on nature of sport

Nature of sport	Number of subjects	Number of subjects in percentage
Open skill	278	59.40
Closed skill	190	40.60
Total	468	100

**4.6 Administration**

Group administration method was used to collect the data. The groups consisted of 20-30 subjects. Before administration comfortable seating was arranged, as far as possible external distractions were minimized. Rapport was established and a general idea of the tests was given. The sequence of the administration of the inventories was 1.Inventory for Sport Competition Anxiety (ISCA), 2.Sport Injury Attitude Scale (SIAS), and 3. Inventory for Sport Aggression (ISA). Only after completing the first inventory, the next inventory was given. The subjects were asked to fill up personal details in the space given in the inventory, followed by an understanding of the instructions printed on the top of the inventory. After oral instruction, the subjects were suggested to go through the items and indicate how far they agree or disagree with each statement. Corresponding to

each item five choices were given as mentioned earlier. At every stage, doubts were cleared and clarifications were given to the subjects wherever necessary. In between two consecutive tests, an interval of 5 minutes was provided. The subjects on an average took 45 minutes to complete all the three scales.

The answer sheets were collected back and checked for omissions and those found to be incomplete were eliminated and the final data consisted of 427 subjects.

#### **4.7 Method of scoring**

For all the three inventories, viz. Inventory for Sport Competition Anxiety (ISCA), Sport Injury Attitude Scale (SIAS), and Inventory for Sport Aggression (ISA), the same method of scoring was used. Positive and negative items as well as different dimensions were scored separately. Items measuring particular dimension positively and responded as “strongly agree”, “agree” “undecided”; “disagree” and “strongly disagree” were given the scores of 5, 4, 3, 2 and 1 respectively. And the items measuring particular dimension negatively and responded as “strongly agree” “agree”, “undecided”, “disagree” and “strongly disagree” were given the scores of 1,2,3,4 and 5 respectively.

## **4.8 Item analysis and item selection**

The first major objective of an item analysis is to obtain objective information concerning the items written for the test. This information is valuable for several reasons. It provides the opportunity to checkup on the test writer's subjective judgment in selecting the items to compose the test. Test writer learns how examinees react to items in general and to the items of each test in particular. Starting with a surplus number of items, the writer can save the ones that look best in terms of item statistics. Review of literature reveals that there are so many methods of item analysis. For the present purpose, Edwards' method (Edwards, 1969) was utilized.

Item analyses were performed separately for the three scales concerned and the procedures are explained below.

### **4.8.1. Item analysis of 'Inventory for Sport Competition Anxiety' (ISCA)**

The responses of the 427 subjects were considered for the purpose. The response sheets were arranged in the ascending order of the total score, so as to select the top and bottom 100 subjects each. The items were analyzed with the help of Edwards'

method. The t-values of the items are given in table 4.6 and table 4.7 presents the number of items in the final scale (ISCA) after item analysis.

**Table 4.6**

Inventory for Sport Competition Anxiety (ISCA): the t-values in the draft scale

Cognitive trait anxiety		Somatic trait anxiety	
Item number	t-value	Item number	t-value
13	9.51*	26	10.19*
16	9.28*	33	9.94*
14	9.26*	23	9.71*
2	8.90*	29	9.70*
11	8.81*	36	9.21*
19	8.74*	28	9.02*
5	8.29*	25	8.49*
4	7.88*	22	8.27*
7	7.56	21	8.14
15	7.50	35	7.54
8	7.25	34	7.09
9	7.11	24	7.08
17	7.05	31	6.49
10	6.98	32	5.82
3	6.87	27	5.77
6	6.04	30	5.61
18	5.56	20	5.13
12	4.72		
1	3.35		

\* Selected items

**Table 4.7**

The number of items in the final scale (ISCA) after item analysis

Dimensions	Total items written	Number of items retained	Number of items dropped
Cognitive anxiety	19	8	11
Somatic anxiety	17	8	9

The draft scale and the final scale are given as appendices I and II respectively.

#### **4.8.2. Item analysis of Sport Injury Attitude Scale (SIAS)**

The responses of the 427 subjects were considered for the purpose. The response sheets were arranged in the ascending order of the total score, so as to select the top and bottom 100 subjects each. The items were analyzed with the help of Edwards' method. The t-values of the items are given in table 4.8. Table 4.9 presents the number of items in the final scale (SIAS) after item analysis.

**Table 4.8**

Sport Injury Attitude Scale (SIAS): the t-values in the draft scale

Attitude towards sport injury			
Item number	t-value	Item number	t-value
29	11.03*	24	6.06
28	10.49*	4	5.50
12	10.43*	14	5.50
10	10.17*	23	5.01
30	9.87*	19	5.00
33	9.86*	32	4.71
1	8.77*	35	4.22
6	8.75*	18	4.10
27	8.60*	3	3.92
9	8.49*	8	3.90
21	8.06*	34	3.68
2	7.96*	22	3.67
26	7.93*	20	3.40
15	7.56*	17	2.87
31	7.43*	25	2.50
11	6.88	7	1.82
5	6.87	16	0.71
13	6.08		

\* Selected items

**Table 4.9**

The number of items in the final scale (SIAS) after item analysis

Variable	Total items written	Number of items retained	Number of items dropped
Attitude towards injury	35	15	20

The draft scale and the final scale are given as appendices III and IV respectively.

**4.8.3. Item analysis of Inventory for Sport Aggression (ISA)**

The responses of the 427 subjects were considered for the purpose. The response sheets were arranged in the ascending order of the total score, so as to select the top and bottom 100 subjects each. The items were analyzed with the help of Edwards' method. The t-values of the items are given in table 4.10. Table 4.11 shows the number of items in the final scale (ISA) after item analysis.

The draft scale and the final scale are given as appendices V and VI respectively.

**Table 4.10**

Inventory for Sport Aggression (ISA): the t-values in the draft scale

Instrumental aggression		Hostile aggression	
Item number	t-value	Item number	t-value
10	12.03*	24	11.33*
8	10.28*	22	11.02*
3	9.80*	36	10.03*
4	9.68*	21	9.48*
13	9.49*	28	9.13*
18	9.35*	37	8.71*
15	9.30*	23	8.62*
6	9.24*	25	7.85*
1	9.07	20	7.78
5	8.99	40	7.65
9	8.89	33	7.17
14	8.54	32	7.12
7	8.04	26	7.03
2	7.82	39	6.97
12	7.68	27	5.47
17	5.16	34	4.47
19	3.82	38	4.08
16	2.30	31	3.93
11	1.71	35	3.81
		30	2.20
		29	2.05

\* Selected items

**Table 4.11**

The number of items in the final scale (ISA) after item analysis

Dimensions	Total items written	Number of items retained	Number of items dropped
Hostile aggression	21	8	13
Instrumental aggression	19	8	11

From the draft scale of ISCA, 8 items each from cognitive anxiety, and somatic anxiety dimensions were selected to constitute the final scale of 16 items. The final scale of SIAS consists of 15 items, and from the draft scale of ISA 8 items each from instrumental, and hostile aggression dimensions were selected for the final scale of 16 items. All the items selected for the final scales have high discriminative power as indicated by the high t-values that are significant at 0.01 level.

#### **4.9 Reliability**

Reliability is the first and primary requisite of any measuring instrument. Operationally, it is self- correlation of the test. More specifically reliability refers to internal consistency and temporal stability of the measurement (Freeman, 1965). It emphasizes the proportion of true variance in total variance. Lower amount of error variance will increase the proportion of true variance in the

total variance and, this in turn, will increase reliability. It is therefore necessary to control these factors, which are likely to contribute to error variance. Important factors contributing to error variance are vague-instructions, vagueness in items, scoring errors, lack of rapport, fatigue effects, unpredictable factors like noise, broken pencil, interference and personal characteristics such as fluctuations in attention, poor motivation, health and disturbed emotional conditions (Freeman, 1965).

In keeping with what stated above, proper steps were taken to control these factors. For example to minimize fluctuations in attention and fatigue as far as practicable, the scales were administered in the first half of the day. The assumption is that subjects will be fresh in first half of the day, and will take more interest responding to the items of the scale. Proper care was taken to establish rapport before administering the scale.

Test-retest method requires that the test should be administered twice to the same sample with suitable time interval. Subsequently, the two sets of scores are correlated and the resulting correlation coefficient is referred to as reliability coefficient of temporal stability. One of the obvious advantages of

this method is that the test contents (items) remain completely uniform and equivalent on both occasions, which is one of the important requirements of psychological testing. Moreover, this method saves much time of the test constructor, which might have been wasted in constructing parallel-forms of the test.

While conducting test-retest procedure, utmost care was taken to eliminate practice effect and possible errors due to the intervening variables like psychological and physical changes in respondents. Each of the three scales was administered twice with a time interval of a month to a sample of 35 sport persons. Pearson Product Moment correlation was computed between the two sets of measures to indicate the reliability coefficient.

### ***Inventory for Sport Competition Anxiety (ISCA)***

The Pearson Product Moment correlation coefficient of the scale 'Inventory for Sport Competition Anxiety' (ISCA) obtained is 0.93. Reliability of cognitive anxiety and somatic anxiety are found to be 0.79 and 0.83 respectively (N=35).

### ***Sport Injury Attitude Scale (SIAS)***

Sport Injury Attitude Scale (SIAS) has yielded a correlation coefficient of 0.86.

### ***Inventory for Sport Aggression (ISA)***

Test-retest reliability established for the scale Inventory for Sport Aggression (ISA) using Pearson Product Moment correlation coefficient is 0.87.

Another method used to establish the reliability is split-half method. The split-half reliability of the scales were established using Cronbach Alpha. The Alpha coefficient of ISCA was found to be 0.74 (N=83). Correlations of subscales of ISCA were estimated as 0.69 and 0.68 for cognitive anxiety and somatic anxiety respectively.

Alpha coefficient of SIAS was calculated as 0.73 (N=83).

Alpha coefficient of ISA was estimated as 0.77 (N=83) and that of the subscales, instrumental aggression and hostile aggression were 0.78 and 0.62 respectively.

#### **4.10 Validity**

In psychological measurement the problem of validity arises because the measuring instruments are indirect (Helmstadter, 1966). As these instruments yield only indirect measures, it is very essential to gather sufficient evidence to support that" the

test measures the trait or characteristics for which it was designed.

Thus, validity of a test is concerned with what the test measures and how well it measures (Guilford, 1956; Freeman, 1965; Anastasi, 1968). A test stands valid against some independent criteria. From this, it follows that for a high validity index, a test must show a close correspondence with the criteria. A low correspondence of a test with the criterion measures yields low index of validity.

One of the basic prerequisites of a valid test is that it should be reliable. A test which is not reliable or less reliable, is not expected to correlate well with any external criterion (Freeman, 1965). Validity is not governed by all-or-none law, it is a relative term. The test is valid for a particular purpose and in particular situation only (Guilford, 1956; Nunnally, 1959; Anastasi, 1968). Moreover, validity is not a fixed or a unitary characteristic of the test. With the new uses of the test, new validity indices must be sought (Gulliksen, 1950).

In physical measurement the standard of the criterion is readily available. Hence, determination of validity, relatively

speaking, is an easy job. In psychological measurement the task becomes rather difficult because independent criteria or standards are not easily available. In spite of the fact that the determination of validity is difficult, psychologists have devised various means to estimate validity coefficient of a test. Broadly, there are three basic types of validity-content, empirical and construct. Content validity refers to the systematic evaluation of the items or contents to examine whether they do represent the trait being measured by the test and includes face validity, logical or sampling validity and factorial validity. Empirical validity one in which test under construction is correlated with some external independent criteria and includes. Construct validity is the extent to which the test may be said to measure a theoretical construct or trait (Anastasi 1968). The classification of validation techniques may vary from author to author.

### ***Inventory for Sport Competition Anxiety (ISCA)***

For establishing concurrent validity, 'Inventory for Sport Competition Anxiety' (ISCA) was correlated with SCAT (Sport Competition Anxiety Test, Martenes, 1990). The concurrent validity of ISCA is found to be 0.68 (N=83), while the correlation

coefficients between subdomains of ISCA and SCAT are 0.42 and 0.57 for cognitive and somatic dimensions respectively.

SCAT is a very popular and widely accepted sport specific trait anxiety test in English. The psychometric properties of the criterion test are as follows. The test-retest reliability of the scale is 0.85. Internal consistency coefficients using Kuder-Richardson formula range from 0.95 to 0.97. The content validity as well as concurrent validity of the test has been established. SCAT was correlated with Spielberger's Trait Anxiety Inventory For Adults to find out construct validity, which is estimated as 0.44.

### ***Sport Injury Attitude Scale (SIAS)***

The content validity of the scale, Sport Injury Attitude Scale (SIAS) was assured by experts in the field. The criterion related validity of Sport Injury Attitude Scale (SIAS) was calculated by correlating the SIAS scores with the frequency of occurrence of actual sport injury. The tetrachoric correlation (Reddy, 2002) between the same is found to be 0.43. The estimated value is moderate, however it should be noted that the scores on the scale is not I intended to predict the actual injury but a correlation so that the estimated value is good enough.

Theoretically a negative attitude towards sport injury is related with sport competition anxiety. One of the reasons of sport injury is anxiety (Nideffer, 1980; Cohen & Young, 1981; Feltz, 1984; Williams & Andersen, 1986). Therefore, Sport Injury Attitude Scale (SIAS) is supposed to correlate positively with sport competition anxiety. For the present purpose, SIAS was correlated with 'Inventory for Sport Competition Anxiety' (ISCA). The Pearson Product Moment correlation coefficient between the two scales is found to be 0.72, and the correlation between SIAS and cognitive component of sport anxiety is 0.47, whereas the correlation between SIAS and somatic component of sport anxiety is found to be 0.36. These values are quite significant.

### ***Inventory for Sport Aggression (ISA)***

For establishing concurrent validity, Inventory for Sport Aggression (ISA) was correlated with Sport Aggression Inventory by Kumar and Shukla (1993). The Pearson product moment correlation between ISA and SAI was found to be 0.71(N=83). The correlation coefficients between the subdomains of ISA i.e. instrumental and hostile aggression and SAI are found to be 0.44 and 0.67 respectively.

Chapter 5

# Development of Psychological Intervention Strategy

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## **5.1 Objective**

To develop a psychological intervention based on theatre techniques to control factors debilitating sport performance such as sport competition anxiety, attitude towards sport injury, and sport aggression.

## **5.2 The need for the development of a psychological intervention strategy**

In search of the sport psychological interventions for managing debilitating factors, the investigator came across many a sport specific and general psychological strategies prevalent in the field. Regarding the recent developments in the field of emotion, intelligence and sport sciences along with the similarities between sport theatre, the investigator developed a new strategy to control the debilitating factors. While it is conceived, the peculiar nature of debilitating factors and the limitations of existing intervention strategies were taken into account. The continuing quest and experience in theatre has helped researcher to device the new strategy.

### **5.3 Theatre as a medium of psychological intervention**

It is hardly possible to separate the healing aspect of theatre from the theatre proper. Of course, there were some deliberate attempts to use theatre for curative purposes as in the case of Psychodrama or Drama Therapy. In spite of the fact that we have an affluent theatrical culture, such experimentations are scarcely found in our community,. The therapeutic potential of theatre has been widely accepted and is being used as remedial or developmental means in clinical, industrial, and educational settings.

Many writers have tried to figure out therapeutic use of drama upon many specific groups such as disturbed adolescence (Jennings and Gersie, 1987); people with mental handicap (Brudenell, 1987); elderly people (Langley, 1987); psychiatric patients (Mitchel, 1987; Whitelock, 1987) etc. An exploration of the therapeutic use of the theatre in alcoholics by the researcher proved an additional empirical support to the potential of theatre (Santhosh, et al., 2003). So the investigator decided to seek out the possibility of theatre in sport population and negotiated the idea with experts in the field of theatre, sport and psychology. All

of them were interested in the investigation and contributed their ideas about the subject.

The researcher's theatre experience as well as experience as a group therapist and the exploration of therapeutic uses of theatre for alcoholics helped to determine the required group characteristics including group size, participant costume, properties used; properties of the space used, and the duration and the schedule of the program.

### **5.3.1. Therapeutic use of theatre in ancient times**

#### ***Dramatic ritual***

Just as people have always participated in-groups, they have likewise always been engaged in theatre to a greater or lesser extent. As far back as we can go in recorded history – and even earlier to the cave paintings in France, which depict masked dancers –we know that people participated in some kind of dramatic ritual. Dramatic rituals have always enabled people to celebrate, heal, worship, to influence events, and to mediate between gods and mortals. Ritual drama has, even in the 21<sup>st</sup> century, an important role in the affairs of Indian society, it is belief, healing and worship in an integrated form. Drama has a

unifying quality where by the norms and values of the society are expressed within a context of heightened awareness and sensory experience.

### ***Greek drama***

Contrasting forms of dramatic expression in theatre have a more recent past but still can trace a history of 25,000 years from the classical theatre of ancient Greece. Aristotle used the term 'catharsis' to express the peculiar effect of the Greek drama upon its spectators. In his poetics, he maintains that drama tends to purify the spectators by artistically exciting certain emotions, which act as a kind of relief from their own selfish passions.

### ***Ancient Indian theatre***

The therapeutic potential of drama was not unfamiliar to our ancestors. For instance, in his work , *Natyasastra* , Bharatha says that in the *krita age* the society was perfectly harmonious and happy. It was in the *Treta age* the society become divided by passion and greed and people become deluded by envy and anger and so were subject to joy and sorrow. As a result drama came into being. Drama it is said, would produce solace for the

unfortunate persons who are afflicted by unhappiness, weariness and grief (Kuppuswamy, 1990).

### **5.3.2. Theatre as a medium of psychotherapeutic intervention in modern times**

Though the curative usage of drama has been recognized centuries back, it is only the last century that drama was scientifically developed as a systematic form of psychotherapy. There is at least two approaches currently being practiced to squeeze the healing effect of theatre – psychodrama and drama therapy. Whether it is psychodrama or drama therapy, both approaches evolved relatively straight forward use of drama as source of creative self expression into more deliberate and ambitious attempts to facilitate social learning and even to resolve deep seated emotional conflicts.

Drama therapy is a form of direct work with children and adults through the medium of theatre art, which means the entire range of methods, and structures that belong to what we conventionally call “drama and theatre” (Jennings, 1996). Psychodrama can be considered as any psychotherapy in which patients act out matters related to their problems in the form of

improvisational drama, usually with others who represent significant persons (Sacks, 1993).

### ***Drama therapy***

Drama therapy grew up in Britain in the 1960s and 1970s. Pioneers in the field included Sue Jennings, whose own background of social anthropology and group analysis has had an obvious influence on its character. It began with remedial drama, as much in the sphere of education as in the health professions. Games, exercise to body awareness, non-verbal communication, the use of masks and puppets, creative fantasy work, dance, music, painting, story telling, mime, and role playing all came to be included in the repertoire of remedial drama. Then remedial drama developed into drama therapy, a change of name, which indicated among other things the growing confidence of the movement and accompanied a gradual shift into more specifically psychotherapeutic areas. Drama therapy seems to have followed a parallel evolution to that of psychodrama from a general attempt to encourage spontaneity and creativity to a more intensively structured and carefully controlled system for exploring and

solving important emotional issues through personalized dramatic action (Davies, 1987).

Gennings (1987), a consultant drama therapist, introduces her book stating that “drama and play have been used for many years by professionals of several disciplines as part of remedial education and therapeutic intervention”. However, there has hitherto little literature to support this work. Drama therapy is no longer seen just as a collection of techniques, but as a process which can have a place along side already established modes of therapeutic practice.

### ***Psychodrama***

The discovery of the aspects of sub conscious, through spontaneous dramatic situations have been developed by Dr. J.L. Moreno in an approach to therapy which he calls ‘psychodrama’. In his own words ‘there were in 1914 in Vienna two antithesis to psychoanalysis; the one was the rebellion of the suppressed group versus the individual; it was the first step beyond psychoanalysis, ‘group psychotherapy’ The other was the rebellion of the suppressed actor against the world. This was the second step beyond psychoanalysis, the psychodrama.

Commenting on the effectiveness of psychodrama Karp (1996) quotes two studies by Yalom in 1975 and Kellerman in 1992. Yalom, after reviewing a large body of literature published on therapeutic factors in group psycho therapy, found that interpersonal learning together with catharsis, cohesiveness, and insight were the factors most valued by subjects. Kellerman has reported in two studies that insight, catharsis and interpersonal relations are therapeutic factors central to psycho dramatic group psychotherapy. Karp (1996) reports that psychodrama may be helpful to a wide variety of people, cutting across categories, individual and social problem areas, and a spectrum of behavioral disorders.

### **5.3.3. Some misconceptions**

Jennings (1996) tries to clarify certain popular misconceptions about drama therapy and indeed about theatre itself as follows:

**a) Drama is 'only' acting:** the issue here is the pejorative association with the emphasis in 'only' as if it is unimportant. What is crucial is that it is only acting, otherwise we would be very confused. The dramatic imagination necessary in this acting

process means that we can hypothesize about how life might be in the future and whether or not our perception of it can change from that of the past.

**b) *Drama is life:*** Drama is about life but that is not the same as saying that drama is life. What is important is that drama and theatre enable us to establish a distance from every day life so that we can see it in new and unexpected ways. For most of our lives, we are too close to events to be able to take them in all at once.

**c) *Drama therapy encourages fantasy:*** and the subtext of this statement is that fantasy is dangerous! Drama therapy establishes 'dramatic reality' as being a separate space from 'every day reality'. The space of dramatic reality allows for imagery, metaphor, risk-taking and experiment. It is within this space that we can challenge and be challenged in new and creative ways. Fantasy occurs in all our realities and should not be confused with the developed use of our imagination.

**d) *Drama therapy is role play:*** indeed, role play, one of the methods that drama therapists may use in their practice, is also used by other professions- family therapists, psychologists and

counselors themselves. Some of the more widely used techniques include Soliloquy, Double, Role rehearsal, Mirror technique, Behind the back, Magic shop (Schaffer and Galisky; 1974), Role rehearsal and Key experience.

#### **5.3.4. An exploration in to the theoretical back ground**

*Freudian catharsis* is the release of tension and anxieties by reliving and unburdening that traumatic incidence which in the past, were originally associated with the repression of emotions. Catharsis is often found to have therapeutic value because after pent- up feelings and ideas are released, they are often viewed more realistically by the individual. Dramatic activities give room for catharsis.

As *Moreno* explains therapeutic controlled *acting out* goes one-step further the traditional free-association method. The client is not only allowed to reveal his feelings as catharsis but also he can act his hidden thought and strivings.

According to *Stanislavski*, the first to establish a systematic actor training method, through the rehearsals the actor develops a conditioned response in which his emotion is evoked through the stage stimulus (Moore, 1984). So that it is reasonable to infer that

through the medium of theater *learning principles* can be used for emotional management.

*Bioinformational theory* argues that there are certain physiological mechanisms which help the individual to generate or to change emotional experience corresponding to the changes in emotional expressions. Of course theater is concerned with emotional expressions.

In his book '*performance theory*' Schechner (1988) tries to explore the relationship between theatre and sport. Sport and theatre share several basic qualities as follow.

### ***A special ordering of time***

Clock time is a mono-directional, linear-yet-cyclical, uniform measurement and adapted from day-night and seasonal rhythms. In the performance activities (sport or theatre), however time is adapted to the event, therefore susceptible to numerous variations and creative distortions. The major varieties of performance time are:

- a) event time, when the activity itself has a set sequence and all the steps of that sequence must be completed no matter how long (or short) the elapsed clock time .
- b) set time, where an arbitrary time pattern is imposed on events- they begin and end at certain moments whether or not they have been 'completed'. For example in games like football and basket ball, structured on 'how many' or 'how much' one can do in a prescribed time period.
- c. symbolic time, when the span of the activity represents another (longer or shorter) span of clock time. Or time is considered differently. Once action is framed as 'as performance' spectators read meanings into whatever they witnessed.

***A special values attached to objects***

In every day life, objects are valued for their practical use, scarcity, and beauty. In performance activities, all objects have a market value much less than the value assigned to the objects within the context of the activity.

### ***Non-productivity in terms of goods***

The separation of performance activities from productive work is a most interesting and unifying factor of sport and theatre. A theatre or sport performance might be called a free activity quite consciously outside 'ordinary life' as being 'not serious', but at the same time absorbing the performer intensively.

### ***Rules***

Performance activities including theatre and sport are traditional in most basic sense. Special rules exist and are formulated and persist because these activities are something 'apart from every day life'.

### ***Special spaces for performance***

The spaces for theatre and sport performances are uniquely organized so that a large group can watch small group and become aware of itself at the same time. Great stadiums and theaters are situated in population centers. Unlike office, industrial, or home spaces they are used on an occasional rather than steady bases.

Lowe (1977) summarizes a discussion on 'the beauty of sport' as the dynamics of sport are more akin to the dynamics of theater or dance, the subtle difference appearing in the exploration of the absolutes of strength, endurance, speed, and similar extremes of man's physical potential (typically applied to a value structure founded in competition).

Finally it may be added that the pleasure aspect inherent in sport and theatre makes to denote both of these forms of performance as 'play'.

### **Sport as an aesthetic activity**

Every physical activity has an aesthetic sense. Sport is performance oriented activity. It is spontaneous, joyful and creative in which man finds his aesthetic expression. As every art is beautiful, sport being an artistic exposition is without doubt beautiful so that one finds aesthetic sense in it. Aesthetic sense in every skill helps to exhibit high performance which is a challengeable task in sports. This type of skillful exposition along with top performance attracts the spectators who find pleasure in them.

Pleasure is basically a quality of our psychological sphere, for example, a six run scored by Sachin Tendulkar in cricket looks more glamorous because he does it so smoothly gracefully and effortlessly. The healthy mind leads to achieve an excellent level of performance in attributing complete happiness. Such state is acquired through unity of movements consisting of expression, form, gracefulness, dynamism, style, effortless, novelty, plasticity, and harmony. The aesthetic ability is measured in terms of exposition of one's skill; pleasure obtained out of it, and exhibition of performance. For such aesthetic ability some sports personalities are remembered forever eg. Nadia for Gymnastics, Dhyanchand for Hockey, Maradonna for football, Stephy Graph for tennis and so on.

A sportsman learns different skills of particular sport, but while executing them he adds some of his own characteristic features and creativity, which makes the skills unique with aesthetic sense. Aesthetic skills can be viewed in different types of sports, viz., somersault and synchronized swim in swimming, skills in gymnastics, flight and landing in jumping events, in athletics etc.

Thus, all sports and related skills have aesthetic value in securing high performance. The factors of aesthetic values are intelligence, imagination, self-scholarness, creativity, etc

### **5.3.5. Review of related studies**

Young children's ability to move divergently was defined as their capacity to create and perform different fundamental movement patterns. Children's efforts to produce these patterns as responses to movement problems or tasks, involve aspects of both critical thinking and motor creativity.

The criterion measures of motor creativity are motor fluency, motor flexibility and originality. Fluency is a dimension of divergent movement since subjects are asked to execute as many movement responses as possible. The second dimension of divergent movement is flexibility since each movement response has to be different from any previous motor response. Originality has been defined as statistical rareness or uniqueness of a motor response in comparison to the population sample.

Zachopoulou and Trevlas's (2001) study was designed to provide data about the relation between the quantitative characteristics of creative thinking in early young children. Motor

creativity has been defined as the combination of perceptions into new and fresh motor patterns, which can be either a solution to a pre-established problem or the expression of an idea or emotion by means of the human body. The results of the study showed that the children, who executed many motor responses, had high flexibility in thematic changes. The relation between motor fluency and motor flexibility indicates the relation between the quantity and the quality in the process of idea production. In addition, the children who produced a large number of movement responses presented a high rate of originality in these responses. Children's efforts to produce these patterns as responses to movement problems or tasks, involve aspects of both critical thinking and creative thinking.

The efficacy of training in enhancing the imagination of children was studied by Narayanan (1994). The importance of imagination and its relationship with academic achievement and creativity was also explored. Imagination can be enriched by training. By creating an atmosphere of free will and spontaneity where the individual can experience and guide imagination. Imagination, creativity, and academic achievement are positively correlated

Although play therapy has been well known and widely practiced, therapeutic use of sports is a field whose potential has barely been tapped. The therapeutic use of sports is particularly suitable for prevention of many factors for risk-children, because it offers support or containment of child or parents and at the same time does not disempower them. Also, it provides valuable medium for intervention for children with minor social and emotional problems and even for physically challenged children (Lee, 2001).

Dutta and Oberoi (2002) explored the utility of non-directive play therapy with two emotionally disturbed children. Twenty-five non- directive play sessions comprised the therapy program along with two reflective parent-counseling sessions. The results were analyzed both qualitatively and quantitatively, which revealed the efficacy of the therapeutic program in Indian setting.

Music has been acknowledged as an emotional science as it sets up a certain vibration resulting in a physical reaction. For every person there is a specific vibration that affects him. Each and every person feels engrossed and lost in music as per his feelings. Emotions, thoughts or moods and finds an opportunity to

express oneself. This outlet of oneself is catharsis. Music, being so effective, must have therapeutic value too. One study attempted to determine therapeutic value of music in case of hyper-anxiety. All the subjects having higher levels of anxiety were exposed to music, based on ragas 'Mushrapilu', 'Bahar Bihag', 'Darbari, and 'Shudb Kalyan' for 45 minutes daily for two weeks. The level of anxiety of all the subjects was again measured after exposure to music for two weeks. For significance of difference between anxiety scored under these two conditions, t-ratio was calculated which was 10.68 and significant at 0.01 level. The result exhibits the role of music as positive in reducing the level of anxiety (Lata and Dwivedi, 2001).

Since an intervention strategy based on theatre techniques necessarily requires the 'active participation' of the participants, it is interesting to examine the psychological make up of professional actors. A study by Raychaudhary (1995) views and analyses actors from a psychological viewpoints and tries to establish the psychological make up of a group of Bengali actors. The sample consisted of twenty-five male actors actively and currently working in the field of theatre arts in Calcutta. Actors have been compared with individuals without having any acting

interests. Catell's Sixteen Personality Factors (16PF) Questionnaire was used to assess personality. Results demonstrated actors to be significantly different than non-actors in certain personality factors. Qualitative data obtained from the interviews revealed that the actors' societal and interpersonal modes of interaction together with occasional admission of particular conflicts and anxieties. In final analysis, it may be commented that the Bengali actor's personality dimension differ from his Western counterpart to a large extent which arguably is patterned by socio-cultural origin and upbringing.

Since it is found that logical links exist among sport, theatre and psychotherapy, an exploration to the psychotherapeutic use of theatre in sport seems to be rational.

#### **5.4 The Module**

The present module is the result of:

(A) Field observation: observation of theatre activities including oriental and western training methods, different directive styles, and various effects of theatre on its spectators.

(B) Interview with experts in the field of theatre and psychology.

### ***With some of the theatre experts***

According to Dr. C. Gopan, Reader, Ancient Indian theatre, Sree Sankaracharya University of Sanskrit, Kalady, there is a plethora of opportunity to experiment actor training methods for controlling debilitating factors in sport performance. Since theatre and sport share, many a characteristics, which can be tapped for a therapeutic purpose. He explained the distinction between oriental and western actor training methods and its psychological relevance. Stanislaviski's system (Moore, 1984) being a western origin had been helpful in devising the new intervention programme.

Dr. Ramachandran Mokeri, Assistant Director, School of Drama, Thrissur, is having the opinion that the audience may have a therapeutic experience while viewing a theater performance, but the experience of the actor himself is somewhat different and that could be elicited from the target group. Dr. Mokeri himself as an actor has experiences of the therapeutic experimentations with juvenile delinquents.

Advocate Jayaprakesh Kulur, a Calicut based dramatists who has brought about a paradigm shift in the theater

performance and his 'Kulurian Theatre' is a hallmark of making use of psychological aspect in theatre in refereed by other experts in the field. The investigator has undergone the nuances of Kulur's own actor training methods that has greatly helped in devising a new model. In his own words "theatre itself is therapeutic".

(C) Field experiments: In an experiment on alcohol dependent individuals confirmed the potential of the theatre intervention. The results were analyzed both qualitatively and quantitatively. Significant difference at 0.01 levels was observed between the pre and post self-esteem assessment. A sociometric analysis also showed difference between the group structures before and after intervention.

#### **5.4.1. Key concepts of the intervention strategy**

As far as theatre is concerned its therapeutic aspects essentially constitute the creative use of its potential toward a specific end. Some of the inherent potentials theatre possesses are given below.

**Roles** - Can be used for developing empathy, which is the foundation of social skills. It can also be utilized for learning desired behavioral patterns. The subjectivity of one's ego can be

understood easily by role enactment which is essential for problem solving and insight into social relations.

**Catharsis** - In one way or another, a theatrical situation presents unique and non-threatening means for purging pent-up emotions for the participants. A controlled environment of theatre can be brilliantly used for ventilating the unwanted pressure one individual has developed.

**Spontaneity/Creativity** - Spontaneous and discriminate reactions of an individual towards the physical and social stimuli mark the adaptability. The inevitable spontaneity for a healthy interaction can be boosted by theatrical activities. Moreover, creative solutions for complex human problems are sought out through the medium of theatre.

**Socialization** - Being a group activity, theatre involvement facilitates certain social skills like co-operation, mutual respect and altogether the joy of social living.

**Here and now** - Even if one is re-playing a situation that in reality is quite similar to an actual situation that occurred in the past, or rehearsing a situation that one anticipates might occur in the future, the here and now emphasis is predominated, since

what is important is the spontaneous experience in the moment, and dealing with current feelings and emotional reactions. It stresses on the importance of experiencing the present, in the moment, in the “here and now”. The emphasis is always on the learning that comes from the reality of present experience and one’s reaction to it, as opposed to verbal rehearsing of past events or buried feelings.

#### **5.4.2. Guidelines for group composition and environment**

Following are some of the aspects to be considered, particularly when the prescribed model is used.

##### **1) *Exclusion criteria***

The model is designed for the adult population. Individuals with severe physical or mental handicaps shall be excluded from the group.

##### **2) *Group characteristics***

a) *Homogeneity* – As the homogeneity of the group influence the group process, reasonable criteria for the homogeneity among group members is stressed. Such as a common problem, age group, etc.

b) *Group size* - The minimum number of the participants for the group effect is seemed to be 4, and a maximum of 15. The ideal number would be 8. The usage of this model for individual session is discouraged.

c) *Costume* - Loose dresses providing free movement of the body is preferred. Homogeneity in dressing may be maintained as far as possible.

### **3) *Environment***

a) *Open or roofed space* (e.g. hall) may be used. The space should be devoid of visual or auditory distractions.

b) *The floor* should be neat providing the free movement of the participants.

#### **5.4.3. The role of the therapist/psychologist**

The therapist in the group:

- 1) Facilitates the group interaction by helping to establish an atmosphere that is open and accepting.
- 2) Ensures the involvement of all the participants in the intervention.

- 3) Analyze the process for appropriate modifications.
- 4) Points out the needed modifications in a friendly manner at each and every steps of the programme.
- 5) Interprets the group process when required.
- 6) Plays an active role to bring about the desired outcome of the intervention.

Creative therapist does not, of course, slavishly reproduce the techniques of their teachers. The experimenter often imitates, elaborates or reinvents what others have used previously in different contexts. So that the style or approach may vary according to the interest of the practitioner. Nevertheless, it is necessary to have a framework for maximizing the outcome. Following is such a skeleton for using theatrical techniques for curative purposes in sport.

#### **5.4.4. A module for using theatre as an intervention in sport**

##### ***Stage-1: Preparation and planning***

##### **Step-1: Assess the abilities and needs**

The practitioner/ therapist assesses the abilities and needs of the group. It can be done by standardized psychological

inventories, interviews, and observations or by other professional assessment records.

**Step-2:** Specify the goal of the program

After assessing the needs, the goal of the intervention using theatre techniques is specified. There may be one goal or even more than two goals at a time.

**Step-3:** Plan problem specific strategies

According to the goal the therapist devises specific goal-attainment strategies. He/ she may adopt a formerly used techniques he may invent new strategies intuitively.

**Stage-2: Education**

**Step-1:** Educate the beneficiaries about the program

It is almost impossible to have a group of beneficiaries who completely devoid of doubts. The participants' confidence about the outcome of the program influences not only the efficacy of the program but also the whole process. So, much attention should be given to convince the importance of the program.

## **Step-2: Schedule Sessions**

Sessions are then scheduled according to the convenience of the participants and the therapist. The duration and number of sessions may vary according to the nature of the problem and the strategy implemented. The duration of one session may range from a minutes to several hours.

## ***Stage 3: Intervention***

The intervention includes 8 distinctive but interrelated steps. Each step has its own functions to be accomplished. So that the sequence of the steps should be maintained for the total effect. According to the goal of the intervention program, the step-7 changes, All the other 3 main stages and steps are kept intact. Step-7 is the point at which the therapist implement the problem specific technique as he planned earlier in the stage-1 i.e. preparation and planning. For a better understanding the 'key experience method' , for instance, is used in this model. The key experience is used mainly as a relaxation method.

## **Step-1: Tuning**

Each session starts with tuning. Tuning is a process similar to the tuning of a musical instrument, sitar for example, before

playing it is tuned for a desired effect. Participants having various thoughts and affective states should undergo this process for making them tuned for the intervention. Even singing a song, different rhythms altogether may serve the purpose.

**Step-2: Arousal inducing**

As the participants are initially not active, they need to be alert and vigorous. Any arousal inducing technique, like simple exercise, is adequate.

**Step-3: Making the group suggestive**

The following steps need active involvement of the group members. It cannot be achieved by simply asking to be involved. For yielding involvement the participants should be suggestive. It is attained through simple sensitization procedures working through various sensory modalities.

**Step-4: Cohesion improvement**

As it is need for the group work; group cohesion is improved by certain goal specific activities.

### **Step-5: Improvisations**

A truly theatre technique, is the means of free expression, make the participants affluent in their thinking and creative in expression. The themes for improvisation are related to the aim of the intervention program.

### **Step-6: Problem acting out**

Each participant is encouraged to act out his real problem. The person in question can make use of other participants to play auxiliary roles.

### **Step-7: Key experience acting in**

The problem is replaced by key experience. While the problem state is undesirable, the key-experience is desirable. So that the key-experience is practiced in this step.

Application of key experience- the individual acts his problem state, makes a pause, implement key-experience as he has to do in real life.

### **Step-8: Exit**

As the session starts with a formal technique of tuning, the winding up of the session is also formalized. This step helps the

participants to be aware of their exits from therapeutic experience and subsequent entrance into their day-today life with a new perspective.

**Step-9: Evaluation and follow-up**

The effectiveness of the program is evaluated by the participants with the help of therapist. A proper modification of the program for enhancing the effectiveness is also determined in this step if it is necessary.

The number of sessions is determined in accordance with the objectives of intervention, nature of the technique being used and the feedback from the participants.

**5.5 Epilogue**

The present module was prepared keeping an objective to be used for sport interventions. Being a creative therapy the creativity of the therapist is solicited for maximizing the output rather than a blind imitation.

Chapter 6

# Results and Discussion

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The broad objectives of the present study were: 1. To identify and explore the psychological factors debilitating sport performance and 2. To formulate a psychological intervention strategy, to control those debilitating factors. To meet these objectives three interlinked studies were conducted as given below.

6.1 Study 1: identification of psychological factors debilitating sport performance

6.2 Study 2: An exploration of factors debilitating sport performance.

6.3 Study 3: Effectiveness of psychotherapeutic use of theatre to control factors debilitating sport performance.

The results of these studies are presented and discussed under three heads.

Study 1:  
Identification of factors debilitating  
sport performance

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## **6.1 Study 1:**

### **Identification of Psychological Factors Debilitating Sport Performance**

As the investigator wanted to examine the sport arena in the specific region i.e. Kerala state, the literature on the psychological factors that determine sport performance of Keralites was extremely scarce. So the investigator had to resort to the interview method rather than the content analysis of the literature on the concerned. Still, some researchers have tried to trace out the stress sources in elite figure skaters (Scanlan, et al., 1988), golfers (Cohn, 1990), middle distance runners (Jones et al., 1990), hockey players (Ali, 2002), and among various sport persons (Rajitha, 2004).

Preparation of an interview schedule was the next step to take. Based on the information from an international perspective the investigator could formulate an open-ended question for sport persons, coaches, and physical educators. Being an open-ended question, the interviewee could respond freely and the information obtained included very specific experiences of their sport life. Being an exploratory study, no hypotheses were formulated.

### 6.1.1. Content analysis of the interview

Altogether 62 interviewees participated in the study including 22 coaches, 30 sport persons, and 10 physical educators. The major factors identified and the percentages of respondents identified the specific debilitating factors are shown in table 6.1. The commonly used terms for addressing the factors are given in the brackets.

**Table 6.1**

Factors identified and the percentages of respondents identified the factors

Sl.No	Factors identified	Percentage of respondents
1	Competition anxiety (Tension)	94.57
2	Negative attitude towards injury (Over concern of physical dangers)	73.91
3	Aggression (Lack of killing instinct)	42.39
4	Lack of achievement motivation (motivation)	36.96
5	Coach – athlete relationship	23.91
6	General intelligence (Smartness)	21.71
7	Group cohesion (' we ' feeling)	20.65
8	Other personality characteristics (co-operation, pleasantness, hard working etc)	20.65
9	Lack of confidence	11.96

The content of the interview with sport persons unraveled some of the myths and truths in sport. The respondents were encouraged to describe as much as they knew about psychological factors debilitating sport performance. Though much care was taken for restricting the interview time period to an average of 45 minutes, many of the interviews took one hour to one and half hour due to situational factors. Moreover, majority of the respondents were very much interested to talk to the investigator.

From the interviews it became clear that:

- a) The infra structure of the state for the development of sport is poor.
- b) Anthropological characteristics effect the development of sport persons.
- c) There is no special concern for the psychological development of sport persons, though there are a few physical trainees and coaches who apply their own strategies for the same.
- d) They are in need of psychological support for performance enhancement and maintaining well being. But majority of

them is not familiar with the recent developments in sport psychology.

The respondents could trace out some prevalent performance debilitating factors. But the present research is limited to those factors, which are psychological barriers to the sport persons. Table 6.1 shows the percentages of respondents who identified the specific psychological barriers and respective factors.

From the table 6.1 it is evident that out of the 62 respondents 94.57% of them has attributed competition anxiety as a major barrier. As one basketball coach puts it “most of the players are practice champions, they will do their best during practice but cannot repeat the same in competition situation, ‘due to tension’. Coaches observe that their ‘children’ are simply much more tensed.

As the felt anxiety is a function of anxiety, as a person - variable and other situational factors (Cox, 1998) the investigator decided to include the variable sport competition anxiety in the present study as the major obstacle for blocking the sport performance

The developmental stage, adolescence has some psychological relevance pertaining to overall psychological development of an individual (Weinberg & Gould, 1999). Incidentally, this is the age period where an individual takes the sports as a serious affair. The peculiar socio-cultural environment in the state has resulted in an condition where the youngsters perceive sport as a short cut to secure a job. A dilemma arises there, the youngsters want to excel in their concerned sport discipline at the same time they want to avoid 'unnecessary' physical strains as well as avoid injuries. Their age is so supportive to their notion that the adolescents are much more concerned with their physical appearance. As one athletic coach puts it 'girls are reluctant even to do practice in a sunny day regarding their complexion'.

With such an attitude towards physical harm how they can produce their natural play? It is apparent in table 6.1 that the second most quoted psychological barrier is a negative attitude towards sport injury. Hence this factor gets the due attention in the present study. Out of 62 persons interviewed 73.91% of respondents denoted its importance in sport performance. There are so many reasons for overwhelming concern for physical

dangers like, inadequate play equipment, playground, track, lack of precautions, etc. But here the focus is on the negative attitudes towards sport injury.

'Player aggression' is a confused term. Most of the coaches do believe that player should be 'aggressive' in order to get an upper hand over the opponents. As they denote "body contact games like football, hockey, handball etc. needs aggression from the part of the players." Here what is called 'aggression' is the mistaken 'assertiveness'. Even the earlier sport psychology authors had used the term 'aggression' for 'assertiveness' (Wann, 1997). As mentioned in introduction there can be two types of aggression in the field such as -instrumental aggression and hostile aggression. Both are undesired in certain grounds (Wann, 1997). Assertiveness is very different from aggressiveness. If one player is to be assertive, he/she should perceive the situation objectively, for that the person should be disciplined and avoid aggressive content of his thought and action. When the players are hit by anger their natural play will be ceased because of the shifting of attention from play to harm the opponent or as a result of aggressive arousal. The third concern of the present

investigation is player aggression. A percentage loading of 42.39 by the respondents lights upon this factor.

There are some more psychological factors under consideration by the athletes and coaches. Lack of motivation was suggested by 36.96% of respondents, followed by coach-athlete relationship, smartness, and lack of ' we ' feeling, other personality characteristics and lack of confidence identified by 23.91%, 21.71%, 20.65%, 20.65% and 11.96% respectively.

By further probing it was clear that by smartness they mean general intelligence and lack of ' we ' feeling as lack of group cohesion. Other personality factors they mentioned as a blockage for performance include lack of co-operation, and pleasantness during social interactions and lack of hard work. However, for the present study the major debilitating factors for sport performance were identified as:

1. Sport competition anxiety
2. Negative attitudes towards injury
3. Sport aggression

Since these factors denoted by majority of the respondents, they were considered for further study.

Study 2:  
An analysis of factors debilitating sport  
performance

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## **6.2 Study 2:**

### **An Exploration of Factors Debilitating Sport Performance**

The main objective of study 2 was to analyse the relationships among factors debilitating sport performance: sport competition anxiety, attitude towards sport injury, and sport aggression; and the influence of sex and nature of sport on these variables. The results of the study are presented and discussed under two heads such as 1. Relationships of the variables, and 2. The influence of sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression

#### **6.2.1. Relationship of the variables**

The statistical technique of correlation can be applied when one wants to study the relationship of one variable to other. If two variables correlate with each other, there is reason to believe in the existence of a common relationship. In the present investigation relationships have been established through correlation coefficients by the steps as follow:

6.2.1.1 Relationship between sport competition anxiety, and attitude towards sport injury.

6.2.1.2 Relationship between sport competition anxiety and sport aggression.

6.2.1.3 Relationship between attitude towards sport injury and sport aggression.

### **6.2.1.1 Relationship between sport competition anxiety and attitude towards sport injury**

Since sport competition anxiety has two dimensions, each of these dimension and the total score of the variable considered for analysis. Hence, relationships between the variables are discussed under three heads as follow.

#### **Relationship between cognitive anxiety and attitude towards injury of sport persons**

Hypothesis

*There will be significant relationship between cognitive anxiety and attitude towards sport injury.*

It seems logical to examine the direction and magnitude of the relationship between cognitive anxiety and attitude towards sport injury before exploring the relationship between sport

competition anxiety and attitude towards sport injury. 'Cognitive anxiety,' being one of the components of anxiety has proved its own influence on sport performance compared to the other component-somatic anxiety (table 6.2).

**Table 6.2**

Correlation between Cognitive anxiety and attitude towards sport injury

Variables	Cognitive anxiety	Attitude towards sport injury
Cognitive anxiety	( )	0.474**
Attitude towards sport injury	..	( )

\*\* Significant at 0.01level

Pearson product moment correlation coefficient estimated for the relation under consideration is 0.474, which is statistically significant at 0.01 level. This value indicates a positive linear relationship between cognitive anxiety and attitude towards sport injury. Since the latter variable is a measure of negative attitude towards sport injury, it can be asserted that higher the cognitive anxiety of sport person higher the negative attitude he/she has towards sport injury.

Cognitive anxiety as a distinct entity concerns fear, apprehension and worry about an upcoming athletic event. When this mental component of anxiety caused by negative expectation is increased, concomitant increase in negative attitude towards injury is expected. Many authors (Wann, 1997; Cox, 1998; Weinberg & Gould, 1999; LeUnes & Nation, 2002) have reported that cognitive anxiety is negatively related with performance. Since cognitive anxiety is positively related with attitude towards injury, it is logical to assume that an increase in negative attitude towards injury may be related to poor performance.

Hypothesis is accepted based on the result of the present investigation.

### **Relationship between somatic anxiety and attitude towards sport injury**

Hypothesis

*There will be significant relationship between somatic anxiety and attitude towards sport injury.*

The Hypothesis was tested by computing the Pearson Product Moment Correlation between the variables somatic

anxiety and attitude towards injury. The Correlation coefficient is found to be 0.364, which is significant at 0.01 level. The positive Correlation suggests that higher the somatic anxiety of the athlete higher the negative attitude towards injury (table 6.3).

**Table 6.3**

Correlation between somatic anxiety and attitude towards sport injury

Variables	Somatic anxiety	Attitude towards sport injury
Somatic anxiety	( )	0.364**
Attitude towards sport injury	..	( )

\*\* Significant at 0.01level

The bodily expression of the anxiety, somatic state anxiety has been described as having an inverted-U relationship with sport performance, which is non-linear. The highest levels of performance occurs when individuals is moderately aroused, while the lowest levels of performance are associated with exceptionally low and high arousal (Wann, 1997; Cox, 1998; Weinberg & Gould, 1999; LeUnes & Nation, 2002).

Though cognitive and somatic state anxiety differently correlate with sport performance (Wann, 1997), there is no such

distinction is found in case of the relationships of cognitive and somatic anxiety with attitude towards sport injury. It is revealed by the present investigation that cognitive and somatic anxiety have significant positive correlations with attitude towards sport injury.

Hypothesis is accepted as the result of the study suggest.

### **Relationship between sport competition anxiety and attitude towards sport injury**

Hypothesis

*There will be significant relationship between relationship between sport competition anxiety and attitude towards sport injury.*

As the components of sport competition anxiety, cognitive and somatic anxiety, correlate positively and significantly with the scores on attitude towards sport injury, the total score of 'sport competition anxiety' is also correlated positively and significantly with the negative attitude of sport persons towards sport injury. The correlation coefficient is calculated as 0.472, which is significant at 0.01 level (table 6.4).

**Table 6.4**

Correlation between sport competition anxiety and attitude towards sport injury

Variables	Sport competition anxiety	Attitude towards sport injury
Sport competition anxiety	( )	0.472**
Attitude towards sport injury	..	( )

\*\* Significant at 0.01level

It can be asserted that the sport persons with higher competitive anxiety are likely to have higher negative attitude towards sport injury.

Wann (1997) reports that a positive relationship exists between anxiety and athletic injury. He adds that athletic injuries often foster feelings of anxiety; therefore the relationship between anxiety and injury appears to be reciprocal. Anxious athletes are more likely to suffer sport injury than non-anxious athletes, and in turn sport injury may increase anxiety. It is the view of Williams and Anderson (1986) that personality variables i.e., hardiness, locus of control, achievement with situational variables (i.e. every day life events and daily hassles) to determine the nature and extent of stress response that may due to sport injury.

Two reasons seems plausible for the positive relationship between anxiety and sport injury:

1. If the sport person is highly aroused and the muscles are tensed, which results in the unauthentic movement that may give rise to sport injury.
2. The highly aroused individual's attentional width is narrowed, direction is shifted to internal focus. These two aspects can hinder the relevant environmental cues that are needed to avoid sport injuries.

In the present investigation sport competition anxiety is correlated with negative attitude towards sport injury rather than actual occurrence of sport injury. It is apparent in table 6.4 that sport competition anxiety is positively and significantly correlates with negative attitude towards injury. The coefficient of correlation is 0.472 which is significant at 0.01 level. Higher the sport competition anxiety higher the possibility for negative attitude towards injury. Anxiety and the possibility of sport injury is positively correlated as mentioned earlier. Still another factor, negative attitude towards injury as evident in the study may

contribute to the actual occurrence of sport injury. Hence, hypothesis is accepted.

#### **6.2.1.2. Relationship between competition anxiety and sport aggression**

The Relationship between competition anxiety and sport aggression was analysed under nine heads as follow.

#### **Relationship between cognitive anxiety and instrumental aggression**

Hypothesis

*There will be significant relationship between cognitive anxiety and instrumental aggression.*

A much misunderstood concept 'sport aggression' has been scrutinized by several authors like Wann (1997). One type of player aggression is instrumental aggression- aggression intended to win the game-has been differentiated from hostile aggression- aggression for aggression (Weinberg & Gould, 1999).

Hypothesis was tested by computing the correlation coefficient of cognitive anxiety and instrumental aggression and it

was found to be 0.104 which is not statistically significant as shown in table 6.5.

**Table 6.5**

Correlation between cognitive anxiety and instrumental aggression

Variables	Cognitive anxiety	Instrumental aggression
Cognitive anxiety	( )	0.104
Instrumental aggression	..	( )

Not Significant

To put it another way, sport persons with negative expectations of the game cannot be predicted for aggression for winning the game i.e. instrumental aggression. As the correlation coefficient is not statistically significant, hypothesis is rejected.

### **Relationship between cognitive anxiety and hostile aggression**

Hypothesis

*There will be significant relationship between cognitive anxiety and hostile aggression.*

Aggressive actions motivated by anger and the intend of harming another player i.e., hostile aggression is different from instrumental aggression on its goal. The former is for harming

another player whereas the latter is for winning the game. The relationship between cognitive anxiety and hostile aggression has been explicated by the Pearson Product Moment Correlation coefficient and it is calculated as 0.215 which is significant at 0.01level (table6.6).

**Table 6.6**

Correlation between cognitive anxiety and hostile aggression

Variables	Cognitive anxiety	Hostile aggression
Cognitive anxiety	( )	0.215**
Hostile aggression	..	( )

\*\* Significant at 0.01level

The positive correlation between the variables suggests that sport persons with the cognitive anxiety are tend to show hostile aggression during the game. The higher the cognitive anxiety the player suffers, the higher the possibility to be aggressive in the field with the sole goal to inflict harm to another person. Hypothesis is accepted.

### **Relationship between cognitive anxiety and sport aggression**

Hypothesis

*There will be significant relationship between cognitive anxiety and sport aggression.*

The relationship between cognitive anxiety and different types of aggression - instrumental and hostile aggression - have been discussed above. The results revealed a significant positive relationship between cognitive anxiety and hostile aggression while there is no such relationship between cognitive anxiety and instrumental aggression. Now, relationship between cognitive anxiety and sport aggression total score on aggression including instrumental and hostile aggression- is examined.

The correlation coefficient is estimated as 0.185 which is not statistically significant (table6.7).

**Table 6.7**

Correlation between cognitive anxiety and sport aggression

Variables	Cognitive anxiety	Sport aggression
Cognitive anxiety	( )	0.185
Sport aggression	..	( )

Not Significant

It can be inferred that sport persons, cognitive anxiety, i.e. overwhelmed with negative thoughts about the forthcoming competition, fearful about the abilities of the opponents, doubtful about their own abilities and pessimistic in approach, is not related to their behaviors on the field.

The statistically insignificant correlation coefficient is too inadequate to accept the hypothesis.

**Relationship between somatic anxiety and instrumental aggression**

Hypothesis

*There will be significant relationship between somatic anxiety and instrumental aggression.*

Table 6.8 shows that the correlation coefficient of somatic anxiety and instrumental aggression is 0.116. This value is statistically insignificant for the table value is higher than the estimated correlation coefficient.

**Table 6.8**

Correlation between somatic anxiety and instrumental aggression

Variables	Somatic anxiety	Instrumental aggression
Somatic anxiety	( )	0.116
Instrumental aggression	..	( )

Not Significant

The results suggest that these variables are independent. The bodily responses of anxiety increased sweating, muscle

tension, increased heart rate etc are no way related to instrumental aggression.

Because of above findings hypothesis is rejected.

### **Relationship between somatic anxiety and hostile aggression**

#### Hypothesis

*There will be significant relationship between somatic anxiety and hostile aggression.*

It is apparent from the table 6.9 that 'r' value is significant at 0.01 level i.e. 0.234. It can be said that somatic anxiety and hostile aggression is positively related. An increment in somatic anxiety may result in corresponding increment in hostile aggression or vice versa.

**Table 6.9**

Correlation between somatic anxiety and hostile aggression

Variables	Somatic anxiety	Hostile aggression
Somatic anxiety	( )	0.234**
Hostile aggression	..	( )

\*\* Significant at 0.01level

A logical reason for such a relation can be traced out in the bodily arousal pertaining to both the variables. Pre-competitive somatic anxiety involves an increase in heartbeat, respiration, and body temperature- all are related to autonomic nervous system activities. A high bodily arousal is inevitable for expression of aggressive actions. The high bodily arousal termed as 'somatic anxiety' may act as fuel to accelerate hostile aggression in which the aim of the individual is to spend physical energy to inflict harm to another person. instances player aggression may trigger competitive somatic anxiety in return.

A t-value which is significant at 0.01 level is taken for granted to accept the hypothesis i.e. significant relationship exists between somatic anxiety and hostile aggression.

### **Relationship between somatic anxiety and sport aggression**

#### Hypothesis

*There will be significant relationship between somatic anxiety and sport aggression.*

The correlation coefficient estimated for the variables somatic anxiety and sport aggression is 0.203 which is significant at 0.01 level (table 6.10).

**Table 6.10**

Correlation between somatic anxiety and sport aggression

Variables	Somatic anxiety	Sport aggression
Somatic anxiety	( )	0.203**
Sport aggression	..	( )

\*\* Significant at 0.01level

Sport aggression in the present study is the aggregate score of instrumental and hostile aggression. Though there is no significant relationship between somatic anxiety and instrumental aggression (table 6.8), a significantly positive relationship is evident between somatic anxiety and hostile aggression (table 6.9) as discussed earlier. When the total score of aggression i.e. sport aggression is concerned, it is correlated positively and significantly with somatic anxiety. It could be understood that bodily arousal plays a major role to establish a significant correlation between somatic anxiety and sport aggression. The correlation coefficient is high enough to accept the hypothesis.

## **Relationship between sport competition anxiety and instrumental aggression**

### Hypothesis

*There will be significant relationship between sport competition anxiety and instrumental aggression.*

Two dimensions of sport competitive anxiety, cognitive anxiety and somatic anxiety have been analyzed separately to find out its relationship with sport aggression. Now the total score of sport competition anxiety, including cognitive anxiety and somatic anxiety altogether was examined for its direction and magnitude of correlation with sport aggression and its two dimensions.

**Table 6.11**

Correlation between sport competition anxiety and instrumental aggression

Variables	Sport competition anxiety	Instrumental aggression
Sport competition anxiety	( )	0.124
Instrumental aggression	..	( )

Not Significant

As shown in table 6.11 the correlation coefficient for the relationship between sport competition anxiety and instrumental aggression is found to be 0.124, which is statistically insignificant. Though the relationship is positive, insignificant value of correlation does not support to establish any relationship between the variables. As a type of aggression, instrumental aggression is no way related with sport competition anxiety. The hypothesis formed is rejected.

### **Relationship between sport competition anxiety and hostile aggression**

#### Hypothesis

*There will be significant relationship between sport competitive anxiety and hostile aggression.*

Different from the relation with instrumental aggression, sport competitive anxiety has positive and significant relation with hostile aggression. A calculated value of correlation coefficient is 0.254 with a statistical significance at 0.01 level (table 6.12).

**Table 6.12**

Correlation between sport competition anxiety and hostile aggression

Variables	Sport competition anxiety	Hostile aggression
Sport competition anxiety	( )	0.254**
Hostile aggression	..	( )

\*\* Significant at 0.01 level

With the increase in sport competition anxiety of a sport person a corresponding increase in hostile aggression or vice versa can be read out from this relation. While instrumental aggression is virtually independent, hostile aggression is found to be related with sport competition anxiety. Since the major difference between instrumental aggression and hostile aggression is the difference in the goal of the aggressive behavior (Wann, 1997) some possible expansions could be proposed for its dissimilar relation with sport competitive anxiety. Almost all of the sport persons could be thought of having the goal to win before starting the competition. This goal is not affected by the variations in either in mental state (cognitive anxiety) or the bodily status (somatic anxiety). But the intention to harm other sport persons combined with the feeling of anger (hostile aggression) is accelerated with the pumping up of adrenalin due to anxiety.

In brief, sport competitive anxiety is significantly related with hostile aggression. So the hypothesis is accepted.

**Relationship between sport competition anxiety and sport aggression**

Hypothesis

*There will be significant Relationship between sport competition anxiety and sport aggression.*

The direction and magnitude of the correlation among the sub domains of pre-competitive anxiety and sport aggression vary in accordance with the nature of the pairs correlated. When the total scores of these two variables are correlated it is found that the correlation coefficients (0.219) is significant at 0.01 level in positive direction (table 6.13).

**Table 6.13**

Correlation between sport competition anxiety and sport aggression

Variables	Sport competition anxiety	Sport aggression
Sport competition anxiety	( )	0.219**
Sport aggression	..	( )

\*\* Significant at 0.01level.

Irrespective of its dimensions it can be asserted that the variable sport competition anxiety might influence sport aggression. Some situational factors facilitate aggressive behavior because they lead to increase in physiological arousal (e.g. increase in heart rate, blood pressure, respiration etc). Research has found that increases in arousal can intensify negative emotional responses, there by increasing the likelihood of overt aggressive actions (Baron & Richardson, 1994). A nearly unlimited number of factors may cause or facilitate aggression. Physical factors include temperature, noise, and crowding. Psychological factors include modeling, reinforcement and de individuation (LeUnes & Nation, 2002). Based on above results hypothesis is accepted.

#### **6.2.1.3. Relationship between attitude towards sport injury and sport aggression**

The relationship between attitude towards sport injury and sport aggression is analyzed by calculating correlation coefficients separately for the relations of attitude towards injury and different types of sport aggression as follow.

## **Relationship between attitude towards sport injury and instrumental aggression**

### Hypothesis

*There will be significant relationship between attitude towards sport injury and instrumental aggression.*

Table 6.14 shows that the correlation coefficient for the relation between attitude towards sport injury and instrumental aggression is 0.17 which is not statistically significant, the correlation is positive, however.

**Table 6.14**

Correlation between attitude towards sport injury and instrumental aggression

Variables	Attitude towards sport injury	Instrumental aggression.
Attitude towards sport injury	( )	0.174
Instrumental aggression	..	( )

Not Significant

Instrumental aggression alone found to be reluctant to correlate with any of the variables and its sub domains, like cognitive anxiety, somatic anxiety or sport competitive anxiety. In the case of attitude towards sport injury, the trend has no change,

as there is no significant relation between instrumental aggression and attitude towards sport injury.

The results of the study suggest that the attitude towards injury- includes fear of sport injury, worrying about a forthcoming injury, avoiding certain events due to excess of fear of injury, inability to concentrate on performance due to negative feeling of injury- is unable to influence instrumental aggression- aggression with the goal to win the game, or vice versa.

Hypothesis cannot be accepted as it lacks empirical evidence in the present investigation.

### **Relationship between attitude towards sport injury and hostile aggression**

Hypothesis

*There will be significant relationship between attitude towards sport injury and hostile aggression*

The correlation coefficient estimated for the relationship between attitude towards sport injury and hostile aggression is 0.27, which is statistically significant at 0.01 level (table 6.15). The positive and significant correlation between these variables suggests that higher the negative attitude of a sport person

towards sport injury higher the possibility of expressing hostile aggression by that individual.

**Table 6.15**

Correlation between attitude towards sport injury and hostile aggression

Variables	Attitude towards sport injury	Hostile aggression
Attitude towards sport injury	( )	0.270**
Hostile aggression	..	( )

\*\* Significant at 0.01level

Aggressive acts with the intention and goal of inflicting harm to the opponent, filled with by the feeling of anger i.e. hostile aggression, could be connected to one's negative attitude towards injury. There may be a number of reasons for this bond. One such reason can be the fact that a person with excess of fear of injury has a mental set to expect sport injuries caused by limitless reasons. During play the player may have to confront a potential injury producing situation initiated by the opponent. As the player is prejudiced, it is likely to evaluate the opponent's action as intentionally rather than unconsciously. This may trigger the subsequent hostile aggressive actions by the player.

Hypothesis is rejected based on the results of the analysis.

## **Relationship between attitude towards sport injury and sport aggression**

### Hypothesis

*There will be significant relationship between attitude towards sport injury and sport aggression.*

Sport aggression is the aggregate of instrumental and hostile aggression. It is evident in table 6.16 that sport aggression significantly and positively correlates with attitude towards sport injury. The correlation coefficient is found to be 0.26( $P < 0.01$ ). While the instrumental aggression does not correlate with attitude towards injury, hostile aggression significantly correlates with attitude towards injury. From the results, it can be inferred that one's increment in negative attitude towards sport injury may result in concomitant increment in aggression in the field vice versa.

**Table 6.16**

Correlation between attitude towards sport injury and sport aggression

Variables	Attitude towards sport injury	Sport aggression
Attitude towards sport injury	( )	0.260
Sport aggression	..	( )

Significant at 0.01 level

## Relationship between attitude towards sport injury and sport aggression

### Hypothesis

*There will be significant relationship between attitude towards sport injury and sport aggression.*

Sport aggression is the aggregate of instrumental and hostile aggression. It is evident in table 6.16 that sport aggression significantly and positively correlates with attitude towards sport injury. The correlation coefficient is found to be 0.26( $P < 0.01$ ). While the instrumental aggression does not correlate with attitude towards injury, hostile aggression significantly correlates with attitude towards injury. From the results, it can be inferred that one's increment in negative attitude towards sport injury may result in concomitant increment in aggression in the field vice versa.

**Table 6.16**

Correlation between attitude towards sport injury and sport aggression

Variables	Attitude towards sport injury	Sport aggression
Attitude towards sport injury	( )	0.260*
Sport aggression	..	( )

\*Significant at 0.01 level

and closed skill category) on sport competition anxiety, attitude towards sport injury, and sport aggression and its sub domains. The results and discussions are classified in to three major sub sections based on the three dependent variables as follow.

#### **6.2.2.1. Influence of sex and skill category on sport competition anxiety**

This section is further sub divided into three on the basis of dimensions sport competition anxiety such as cognitive anxiety, and somatic anxiety.

##### **Influence of sex and skill category on cognitive anxiety**

Hypothesis

*There will be significant main and interaction effects of sex and skill category on cognitive anxiety*

The results of the analysis are shown in table 6.17. The interactive effects and independent effects of the variables are shown by the F-values.

**Table 6.17**

Results of two-way ANOVA for cognitive anxiety of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Cognitive anxiety	14591.87	30.40	1220.78	1220.78	40.16**	981.85	981.85	32.30**	22.63	22.63	0.74

\*\* significant at 0.01 level.

## Interaction effect

The F-value for interaction effect of sex and skill category on cognitive anxiety is estimated as 0.74 which is statistically insignificant. This means that change in the sex i.e. male or female combined with skill categories (closed and open skill) could not make notable influence on cognitive anxiety. A better understanding of the interaction can be made by analyzing table 6.18, in which mean and standard deviation of the four cells formed by the combinations of the variables are given.

**Table 6.18**

Mean and standard deviation of cognitive anxiety for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	25.95(5.37)	21.95(5.21)	23.95(5.29)
Female	28.47(5.92)	25.57(6.05)	27.02(5.99)
Total	27.21(5.65)	23.76(5.63)	

It is evident from the table 6.18 that female sport persons in the closed skill category scored highest on cognitive anxiety than any other sub groups. Like wise, male sport, persons in open skill category scored lowest on the variable concerned. The scores on

cognitive anxiety by male sport persons in closed skill category is more or less same for female sport persons in open skill category and the means are 25.95 and 25.57 respectively. On both skill categories female scored higher than the males.

### **Main effects**

As it is found an insignificant interaction effect by sex and skill category on cognitive anxiety, the main effects of the variables are examined. The results of the analysis are given in the table 6.17. The F-value for the main effect of sex is found to be 40.16 which is significant at 0.01 level. Table 6.18 shows separate mean and standard deviation for males and females. The female sport persons are identified as higher (mean, 27.02) on cognitive anxiety than the males (mean, 23.95).

Table 6.17 shows that the main effect of skill category is statistically significant. The F-value calculated for the same is 32.30 which is significant at 0.01 level. Table 6.18 with mean and standard deviation for separate skill categories present a more clear picture. Sport persons in closed skill category obtained a mean of 27.21 on cognitive anxiety whereas sport persons belong to open skill category obtained 23.76. This statistically significant

difference between the means denotes that sport persons belong to athletics, swimming etc are tend to be more anxious cognitively than footballers, volleyball players, cricketers etc.

Reasons for this distinction in cognitive anxiety can be traced out. Some of the possible causes are as follows:

1. The differences in the nature of the sporting events. That is the outcome of the competition depends upon many external factors including the abilities of the opponents in case of open skill category sport, whereas athletes or weight lifters who come under close skill category are likely to believe the outcome of the competition solely depends upon their own capabilities, for they have to repeat the performance exactly what they did in their practice sessions. This emphasis on one's own responsibility for win or loss may give rise to worry about the expectations about the results of the competition, which is more in the case of closed skill category sporting events. Thus the result is contrary to common sense that the uncertainty associated with open skill sporting events result in increased cognitive anxiety.

2. Most of the open skill category sport events are team games while most of the sporting events belong to closed skill category are individual events. Competing as a team would provide room for the sharing of responsibility that may reduce undue pressure due to negative thoughts. Hence cognitive anxiety might be seen low in open skill category sport persons.
3. The team members can discuss the problems and solutions whenever it require this also may contribute to reduce the cognitive anxiety in open skill category sport persons.

It can be contented that though there is no interaction effect, sex and skill categories have independent effect on cognitive anxiety. Therefore the hypothesis is partially accepted.

### **Influence of sex and skill category on somatic anxiety**

#### Hypothesis

*There will be significant main and interactive effects of sex and skill category on somatic anxiety*

The results of the analysis are presented in table 6.19. The interactive effect and main effects of the variables are shown by the F-values.

**Table 6.19**

Results of two-way ANOVA for somatic anxiety of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Somatic anxiety	14936.03	31.12	1251.27	1251.27	40.22**	1534.12	1534.12	49.30**	0.86	0.86	0.03

\*\*significant at 0.01 level.

## Interaction effect

The F-value, calculated for the interaction effect of sex and skill category on somatic anxiety is 0.03, which is statistically insignificant even at 0.05 level. In effect, it can be professed that the variable sex in combination with different categories of skills could not make any influence on somatic anxiety. The interaction is more clear in table 6.20 in which mean and standard deviation of the four cells formed by the combinations of the variables are given.

**Table 6.20**

Mean and standard deviation of somatic anxiety for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	27.50(5.21)	22.98(5.71)	25.24(5.46)
Female	30.74(5.35)	26.43(5.53)	28.59(5.44)
Total	29.12(5.28)	24.71(5.62)	

Female sport persons belong to closed category scored high on somatic anxiety i.e. (mean, 30.74) while open skill category male sport persons obtained the lowest (mean, 22.98). Closed skill

category males and open skill category female scored more or less equal i.e. 27.50 and 26.43 respectively. On both skill categories males scored lower than their female counterparts. Irrespective of their sex, closed skill category sport persons scored higher than open skill category sport persons did.

### **The main effects**

The main effects of sex and skill categories are discussed as follows. The results of the analysis are presented in table 6.19. The F-value for main effect of sex is found to be 40.22 which is significant at 0.01 level also. Table 6.20 shows that the mean score of male sport persons on somatic anxiety is 25.24 and that of the females is 28.59. It can be inferred from the results that most of the competition situations produce high arousal in females accompanying with increased heartbeat, increased temperature and digestive problems compared to male sport persons.

The F-value of main effect of skill category for sport competition somatic anxiety is calculated as 49.30 which is statistically significant at 0.01 level (table 6.19). In effect, sport persons belong to different categories of sport differ in somatic

anxiety. The distinction is clear in table 6.20 in which the mean for closed skill category is shown as 29.12 and that of open skill category is 24.71. The significantly high mean value for closed skill category suggests some relevant inferences. Sprinters, jumpers, throwers, swimmers, cyclists etc.-closed skill category-experience more somatic anxiety or bodily arousal in comparison with footballers, volley ball players, badminton players etc.-open skill category. Though interaction of the variables sex and nature of sport on somatic anxiety is absent, main effects of the variables are present. Hence the hypothesis is partially accepted.

### **Influence of sex and skill category on sport competition anxiety**

#### Hypothesis

*There will be significant main and interaction effects of sex and skill category on sport competition anxiety*

So far, the influence of sex and skill category on two dimensions of competition anxiety was examined. Now the total score on competition anxiety is analyzed.

**Table 6.21**

Results of two-way ANOVA for sport competition anxiety of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Sport competition trait anxiety	44026.58	91.72	4943.91	4943.91	53.90**	4970.58	4970.58	54.19**	32.28	32.28	0.35

\*\*significant at 0.01 level.

### Interaction effect

It is clear from the table 6.21 that there is no significant interaction effect on sport competition anxiety by sex and skill category. The F-value for the same is 0.35, which comes under the table value for statistical significance. It can be inferred that competitive anxiety is no way affected by the interaction of sex and skill category. Table 6.22 gives a better understanding about the interaction.

**Table 6.22**

Mean and standard deviation of sport competition anxiety for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	53.45(9.11)	44.93(9.32)	49.19(9.22)
Female	59.21(9.99)	52.00(10.17)	55.61(10.08)
Total	56.33(9.55)	48.47(9.75)	

On an average, closed skill category, female sport persons scored the highest (59.21) in competitive anxiety followed by closed skill males (53.45), open skill females (52.00) and the lowest by open skill males (44.93).

The descending sequence of the mean of four groups on sport competition anxiety is found to be repeated on the two dimensions of anxiety - cognitive and somatic anxiety - as well. Though the difference is too small to be significant, it is observed that closed skill category females are more anxious than open skill category males for the former scored the highest (59.21) and the latter group scored the lowest (44.93). On both the skill categories females scored high. In addition, closed skill sport persons scored higher than the open skill category on both the groups based on sex. The results of the present study suggest the absence of interaction between sex and skill category on sport competition anxiety as evident by the F-value (table, 6.21).

### **Main effects**

Taken together, cognitive anxiety and somatic anxiety, i.e. sport competition anxiety is found to have sex difference. Female's mean i.e. 55.61 is significantly higher than the males' mean 49.19(table 6.21). The F-value of the main effect of sex on sport competition anxiety is 53.90, which is significant at 0.01 level.

As a debilitating factor, much can be said about sport competition anxiety based on the above findings. Female sport

persons are more anxious before starting the competition than the male sport persons in both the dimensions of anxiety i.e. cognitive and somatic anxiety. They are more worried about their inabilities and less confident; and they have more negative expectations about the competition coupled with increased bodily arousal and concomitant changes in bodily functions like increased blood pressure, restlessness, increased sweating, and decreased control over elimination needs. This finding is consistent with the earlier findings. For e.g. Amir and Kozak (1998) found that differences exist between men and women in felt anxiety; women report more anxiety.

As early discussed, irrespective of their sex, closed skill category sport persons were found to be higher on both the dimensions of sport competition anxiety, i.e., cognitive and somatic anxiety. When the total score is concerned, still there exists significant mean difference as shown by the F-value, i.e. 54.19 (table 6.21). The mean and standard deviation of the particular groups are presented in table 6.22). Open skill category sport persons have obtained a mean of 48.47 whereas that of the closed skill category is 56.33. So that it can be asserted that closed skill sport persons viz. jumpers, sprinters, cyclists,

swimmers, rowers etc. are more anxious before commencing the contest compared to basket ball players, cricketers, foot bawlers and soft ball players etc.

The difference in the nature of the sport category might have attributed to the mean difference between two skill categories. As discussed earlier, most of the closed skill category sport events are individual sporting events while almost all the team games come under open skill category. As one might expect that open skill category sport persons are potentially anxious because of the uncertainty of the events inherent in them. In open skill category, apart from the competitors' skills and abilities, opponents' strengths and weaknesses are also reckoned. The ultimate result of the competition is a function of abilities and disabilities of the competitors and a plethora of situational factors. But the result of the present study indicates that open skill category sport persons experience more competitive anxiety. This contradiction can be attributed to certain other factors as follow:

1. Even though they are potentially more anxious, there are more situations for catharsis as most of the open skill category sport events are team games.

2. There is a feeling of shared responsibility for each of the team members.
3. There are chances for social facilitation and leader effectiveness. That is, if there is one member who is confident enough, some times he might be the team captain, it may help to develop confidence in other members of the team.

In brief, sport competition anxiety is higher in closed skill category sport persons. This finding is also supported by earlier findings i.e. taken separately on both the dimensions of competition anxiety, cognitive and somatic, closed skill category sport persons were found to be higher. Hypothesis is partially accepted because of the significant main effects.

#### **6.2.2.2. Influence of Sex and nature of sport on attitude towards sport injury**

Hypothesis

*There will be significant main and interaction effects of sex and skill category on attitude towards sport injury*

The influence, independent and interaction effects, of the variables of sex and nature of sport on attitude towards sport injury was estimated by 2×2 two-way ANOVA.

### **Interaction effect**

The results of two-way ANOVA for attitude towards sport injury by sex and skill category are shown in table 6.23.

**Table 6.23**

Results of two-way ANOVA for attitude towards sport injury of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Attitude towards sport injury	33901.93	70.63	649.16	649.16	9.19**	1098.02	1098.02	15.55**	5.53	5.53	0.08

\*\*significant at 0.01 level.

Since the F-value is found to be statistically insignificant i.e.0.08, it is inferred that there is no interaction between sex and skill category on attitude towards sport injury. For a better understanding of the variables, the mean and standard deviation are presented in table 6.24.

**Table 6.24**

Mean and standard deviation of attitude towards sport injury for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	39.13(8.64)	35.59(8.23)	37.36(8.44)
Female	42.00(8.13)	37.93(8.75)	39.97(8.44)
Total	40.57(8.39)	36.76(8.49)	

The lowest mean has been obtained for the group of open skill category males i.e. 35.59 followed by open skill category females (mean, 37.93), closed skill category males (mean, 39.13) and the closed skill category females (mean, 42.00) as the highest mean difference among these four groups are statistically insignificant however.

### **Main effects**

As there is no significant interaction effect by sex and skill category on attitude towards sport injury, the main effects of the

variables are examined. The results of the analysis are given in the table 6.23. The F-value for the main effect of the sex is found to be 9.19, which is significant at 0.01 level. Table 6.24 shows separate mean and standard deviation for males and females. The mean score obtained by males and females are 37.36 and 39.97 respectively. So that it can be understood that female sport persons are higher than their male counterparts are on negative attitude towards sport injury.

Many coaches and veteran athletes have pointed out to the investigator that female athletes are more body conscious than the male athletes are. The results of the present investigation give empirical support to this notion. The peculiar role of females in our culture might be one of the factors nourishing this phenomenon.

The F-value obtained for the main effect of skill category is 15.55 (table 6.23). This value is high enough to be statistically significant at 0.01 level. This can be considered as an indicator of significant mean difference between the skill categories. In table 6.24 it is prominent that closed skill category sport persons are higher (mean, 40.57) on attitude towards sport injury than open skill category sport persons (mean, 36.76).

This finding suggests that regarding negative attitude towards sport injury, closed skill category sport persons are more scared of sport injury compared to open skill category sport persons. Footballers, volleyball players, cricketers- open skill category- hold more positive attitude towards sport injury. This fact might be as a result of:

1. Higher possibility of social support by the team mates at the time of injury.
2. If it is necessary, one's active participation in the event can be with drawn due to fear of injury and other players can substitute the same.
3. Higher possibility of modeling; positive attitude towards sport injury may be learned observing other players handling injury effectively.

It is interesting to note that the means of both males and females in open skill category are lower than any of the means in closed skill category. Another observation is that the sequence of ascending order of the means of four groups (table 6.24) is as follows; open skill male, open skill female, closed skill male and finally closed skill female. The above said sequence is echoed in

case of cognitive anxiety, somatic anxiety and sport competition anxiety so as to reveal an apparent relationship among these variables. And these relationships are supported by other findings in the present investigation as discussed in section 6.1 (relationship of the variables). Hence the hypothesis is partially accepted.

### **6.2.3. Influence of sex and nature of sport on sport aggression**

This section is further divided into three on the basis of dimensions of sport aggression and the total score as sport aggression.

#### **Influence of sex and nature of sport on instrumental aggression**

##### **Hypothesis**

*There will be significant main and interaction effects of sex and skill category on instrumental aggression*

##### **Interaction effect**

The interaction effect of sex and skill category on instrumental aggression is statistically insignificant. The results are shown in table 6.25.

**Table 6.25**

Results of two-way ANOVA for instrumental aggression of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Instrumental aggression	17766.10	37.01	15.22	15.22	0.14	356.16	356.16	9.62**	0.35	0.35	0.01

\*\*Significant at 0.01 level.

The F-value is estimated as 0.01. Sex difference along with different categories of skills does not have any impact on instrumental aggression-aggression for winning the game. A closer look of the interaction is presented in table 6.26.

**Table 6.26**

Mean and standard deviation of instrumental aggression for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	21.01(5.07)	23.30(6.63)	22.16(5.85)
Female	20.84(5.61)	22.89(5.38)	21.87(5.50)
Total	20.93(5.34)	23.10(6.01)	

As the table shows, the mean of the cells are approximately equal. Open skill category male sport persons have obtained highest mean (23.30), followed by open skill category females (22.89), closed skill category males (21.01) and finally closed skill category females (20.84). The lowest mean of open skill category (22.89) is higher than the highest mean of closed skill category (21.01). Moreover, in both the skill categories males scored higher than the females.

## **Main effects**

The independent effects of the variable sex and skill category on instrumental aggression are discussed separately. The main effect of sex on instrumental aggression is estimated as the F-value for main effect in table 6.25. The F-value is calculated as 0.14, which is statistically not significant. Table 6.26 gives a clear idea about the mean difference of male and female groups. Instrumental aggression, being one type of aggression which is too specific to sporting situations, has been a target for criticism on its aspect of intention (Gardner & Janelle, 2002). Aggression is considered as rather a male characteristic (Cox, 1998). But it is demanded in sport as some authors opinioned (Widemeyer & Birch, 1984). Here the focus is on sex difference on instrumental aggression it is interesting to note that there is no much difference between the mean scores of male sport persons (22.16) and female sport persons (21.81) which is evident in F-value i.e. 0.14.

Even though there is no independent effect of the variable sex on instrumental aggression, the variable skill category has effect on the dependent variable. The main effect is reflected by F-value (9.62) given in table 6.25.

The effect is more explicit in table 6.26 in which separate mean and standard deviation for the different categories are given. Mean of the closed skill category is 20.93 whereas that of the open skill category is 23.10. The statistically significant main effect suggests that the footballers, basket ball players, kabadi players, softball players etc. are more aggressive instrumentally during the competition than jumpers, rowers, sprinters, throwers and swimmers etc. It can be reasonably assume that open skill category sport persons would get more opportunities to manipulate their external world during play rather than their closed skill counterparts.

The intention in instrumental aggression is to inflict harm on other person with the goal to win the competition. Being other things equal, the opportunity to perform instrumental aggression to win the game is more in closed skill category compared to closed skill category sporting events. This might be the reason for mean difference in instrumental aggression of different sport categories. Hypothesis is partially accepted.

## **The influence of sex and nature of sport on hostile aggression**

### Hypothesis

*There will be significant main and interaction effect of sex and skill category on hostile aggression.*

### **Interaction effect**

The interactive effect of sex and skill category on hostile aggression is statistically not significant. The results are presented in table 6.27.

**Table 6.27**

Results of two-way ANOVA for hostile aggression of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Hostile aggression	14159.95	29.50	1.18	1.18	0.04	0.08	0.08	0.003	2.71	2.71	0.09

Not significant

The F-value is estimated as 0.09 that is not significant. Sex difference clubbed with different categories of skills do not have any impact on hostile aggression. A clear idea of the interaction can be identified in table 6.28

**Table 6.28**

Mean and standard deviation of hostile aggression for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	18.86(4.87)	18.98(5.34)	18.92(5.11)
Female	19.26(8.42)	19.00(4.46)	19.13(6.44)
Total	19.06(6.65)	18.99(4.90)	

As the table shows, the mean of the cells are approximately equal. Closed skill category female sport persons have obtained the highest mean (19.26), followed by open skill category females (19.00), open skill category males (18.98) and closed skill category males(18.86). It is interesting to note that in both the categories females' mean is higher than that of males.

**Main effects**

The main effect of sex on hostile aggression is estimated as the F-value for main effect (table 6.27). The F-value is calculated

as 0.04 that is not significant. Table 6.28 gives a clear idea about the mean difference of male and female groups.

Hostile aggression is the aggression with the lone intention to harm another person is considered to be worst of its kind, which is no way encouraged in sport. Nevertheless, it is amazing to note that there is not sex difference in hostile aggression. The mean scores of male and female for hostile aggression are 18.92 and 19.13 respectively.

The independent effect of skill category on hostile aggression is calculated as the F-value for main effect (table 6.27). As the F-value is 0.003, which is statistically not significant, it can be inferred that there is no significant mean difference between open and closed skill category sport persons on hostile aggression. The means of different groups are shown in table 6.28. Closed skill category obtained a mean of 19.06 where as open skill category secured a mean of 18.99. It may be noted that open skill category sport persons are significantly higher on instrumental aggression however; their mean score on hostile aggression is slightly lower than that of the closed skill category. Open skill category sport persons would get more opportunities to manipulate their external environment during play rather than their closed skill counter

parts; this may lead to instrumental aggression. The intention of the individual is more important in determining aggression as hostile or instrumental. So that it can be asserted that the nature of sport does not influence the intention of the player regarding the aggressive actions. This may be due to the inherent nature of sport as some authors consider it as a sublimation of aggressive instinct (Gill, 1986). Whether it is closed skill dominant sport or open skill dominant sport, the ultimate intention is to win the game at any cost.

Hypothesis is rejected on the above grounds.

#### **6.2.2.7. The influence of sex and nature of sport on sport aggression**

##### **Interaction effect**

Hypothesis

*There will be significant main and interaction effects of sex and skill category on sport aggression*

- The combined effect of the variables sex and nature of sport on sport aggression - total score of instrumental and hostile aggression
- - has been estimated and represented by the F-value. The F-value is calculated as 0.05 (table 6.29), which is statistically insignificant.

**Table 6.29**

Results of two-way ANOVA for sport aggression of sex and skill category

Variable	Residual		Main effect						Interaction		
			Sex			Skill category					
	Sum of squares	Mean square	Sum of squares	Mean square	F	Sum of squares	Mean square	F	Sum of squares	Mean square	F
Sport aggression	45442.35	94.67	7.92	7.92	0.08	345.91	345.91	3.65	5.03	5.03	0.05

F-values not significant.

In brief, it can be stated that the variable sex in combination with different skill categories could not make any influence on sport aggression. The nature of interaction is vivid in table 6.30 in which mean and standard deviation of the variables are given.

**Table 6.30**

Mean and standard deviation of sport aggression for different levels of sex and skill categories

Sex	Skill categories		Total
	Closed	Open	
Male	39.96(8.28)	42.28(10.33)	41.12(9.31)
Female	40.09(11.48)	41.89(8.23)	40.99(9.86)
Total	40.03(9.88)	42.09(9.28)	

Male sport persons belong to open skill category has obtained highest on sport aggression (mean, 42.28) while the closed skill category males scored the lowest (mean, 39.96). It may be noted that the males in open skill category are higher than their female counterparts whereas males in closed skill category are lower than their female counter parts on sport aggression.

## **Main effects**

The earlier discussions about two types of aggression revealed that there is no sex difference either on instrumental aggression or on hostile aggression. Taken together, instrumental and hostile aggression as sport aggression the sex difference was analyzed as the main effect (table 6.29). The F-value is statistically insignificant. The means of the groups, males and females, irrespective of their skill category are 41.12 and 40.99 respectively.

As the F-value is statistically insignificant it can be said that male and female sport persons do not differ in sport aggression. Contrary to the common sense, female sport persons are found to have virtually same degree of aggression equal to that of male counterparts. The reason for apparent equality of sport aggression seems to be: 1. The particular nature of activity these individuals involve in, 2. Unusual expenditure of energy, legitimate defense and attack, all inherent in sport and 3. All the above said characteristics are traditionally related with masculinity. Naturally, the males require no extra effort to enter the arena of sport while it matters for the females. They need to cultivate

certain skills, attitudes, and temperament specific to sport. These deliberate attempts might result in concomitant changes automatically in other aspects of sport. One of such aspects could be sport aggression.

Skill category has been identified as having independent effect on instrumental aggression. But hostile aggression failed to yield such an influence. When these two variables considered together as the score of sport aggression, it is found that sport aggression is not influenced by skill category. On the other hand, there is no significant mean difference between the groups –closed and open skill category on sport aggression. The mean and standard deviation of the groups are shown in table 6.30. Open skill category sport persons scored slightly higher (mean,42.09) than the closed skill sport persons(40.03).

Considering the above results, the hypothesis is rejected.

Study 3:  
Effectiveness of psychotherapeutic use  
of theatre to control factors debilitating  
sport performance

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### **6.3 Study 3:**

#### **Effectiveness of Psychotherapeutic Use of Theatre to Control Factors Debilitating Sport Performance**

The objective of study 3 was to test the effectiveness of newly developed intervention strategy to control factors debilitating sport performance such as sport competition anxiety, attitude towards sport injury, and sport aggression. For this purpose 61 sport persons who were above average on these variables were identified. Respecting situational constraints and the practicability of conducting an intervention on sport, the investigator had to select a small number of participants who represent the problem group. Further it was identified that the problem group of 61 sport persons is heterogeneous in the number of debilitating factors present in each individual. For this reasons, the sample was grouped according to the number of debilitating factors present in each individual. Thus, seven sub groups were identified as:

Group 1: sport competition anxiety (N=9)

Group 2: attitude towards sport injury (N=4)

Group 3: sport aggression (N=5)

Group 4: sport competition anxiety and attitude towards sport injury (N=9)

Group 5: attitude towards sport injury and sport aggression (N=11)

Group 6: sport competition anxiety and sport aggression (N=6)

Group 7: sport competition anxiety, attitude towards sport injury and sport aggression (N=17)

From each of these sub groups subjects for experimental group and 2 subjects for control group were randomly selected so as to obtain a total of 14 subjects in experimental group and 14 subjects for control group. And the intervention was conducted on the experimental group while the control group was refrain from any such treatment. Pre-test intervention assessment was conducted on both the groups before commencing the intervention. The intervention was performed on all the members of experimental group at a time. The total number of sessions was seven. Each session had an average duration of 90 minutes. It took one week to complete the entire programme (one session per day). The intervention strategy was developed in such a fashion by

which all the three debilitating factors are targeted to be eliminated through a single administration comprising seven sessions. As already mentioned, the experimental and the control groups included participants with different problems, the data was analysed focusing the three debilitating factors separately. During analysis, the experimental group as well as the control group was divided into three each such as: 1. The group of competitive anxiety, 2. The group of negative attitude towards sport injury and 3. The group of sport aggression. The composition of these three groups is given below.

**1. The group of competitive anxiety**

- a. Participants with competition anxiety (N=2)
- b. Participants with competition anxiety and negative attitude towards sport injury (N=2)
- c. Participants with competition anxiety and sport aggression (N=2)
- d. Participants with competitive anxiety, negative attitude towards sport injury and sport aggression (N=2)

## **2. The group of negative attitude towards sport injury**

- a. Participants with negative attitude towards sport injury (N=2)
- b. Participants with negative attitude towards sport injury and competition anxiety (N=2)
- c. Participants with negative attitude towards sport injury and sport aggression (N=2)
- d. Participants with negative attitude towards sport injury, competition anxiety and sport aggression (N=2)

## **3. The group sport aggression**

- a. Participants with sport aggression (N=2)
- b. Participants with sport aggression and competition anxiety (N=2)
- c. Participants with sport aggression and negative attitude towards sport injury (N=2)
- d. Participants with sport aggression, competition anxiety and negative attitude towards sport injury (N=2)

The major advantage of this procedure is that from 14 members of experimental group 24 scores were able to collect because some participants provided more than one score on different variables. Adopting the same method 24 scores were collected from 14 members of control group. This reduced the undue repetition of intervention using a large sample that would have been impractical.

All the three subgroups in experimental group viz., 1. The group of competition anxiety 2. The group of negative attitude towards sport injury and 3. The group of sport aggression was subjected to comparison between the assessments made before and after intervention. The after intervention assessments of the experimental group were again compared with that of control groups. The after intervention assessments of the control is actually a parallel assessment with out any intervention. The results of the analyses examining the significance of mean differences between different subgroups of experimental and control groups are discussed under 3 heads such as: 1. Sport competition anxiety, 2. Attitude towards sport injury, and 3. Sport aggression.

**Before and after intervention comparison of experimental group on sport competition anxiety**

Hypothesis

*There will be significant difference between before and after assessment of experimental group on sport competition anxiety*

To compare the changes in sport competition anxiety, due to the intervention, t-test was performed for scores of the experimental group assessed before and after intervention. Table 6.31 and Figure 6.1 present the results.

**Table 6.31**

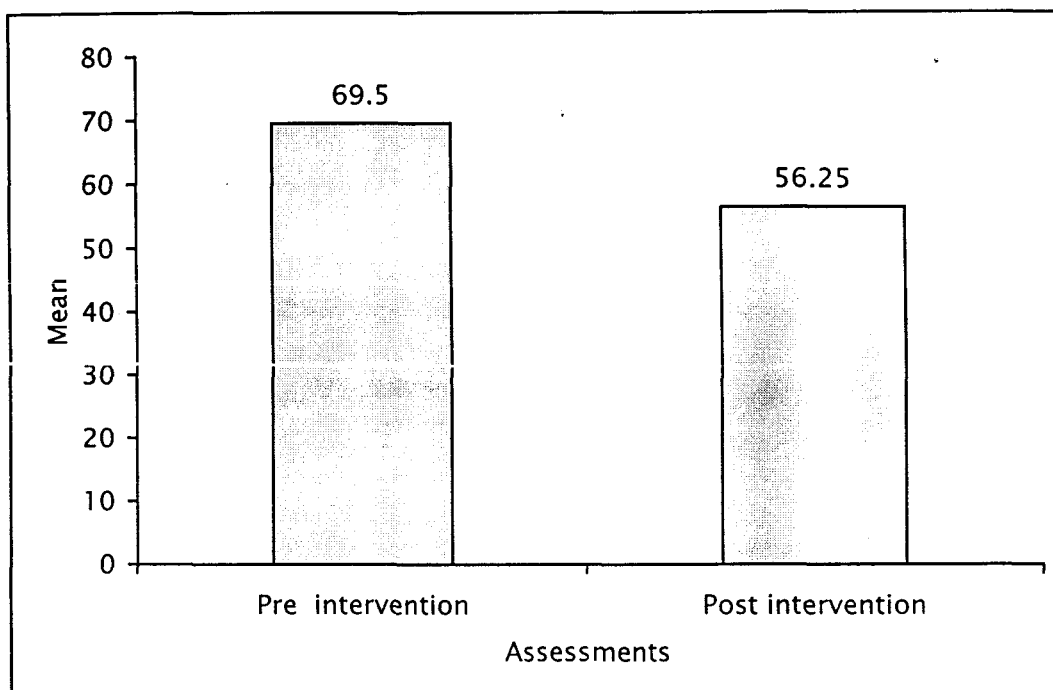
Mean, standard deviation and t-value of experimental group on sport competition anxiety (before and after intervention, N = 8)

Variable	Pre Intervention		Post Intervention		t-value
	Mean	SD	Mean	SD	
Sport competition anxiety	69.50	4.93	56.25	6.45	7.320*

\*Significant at 0.001 level

**Figure 6.1**

Sport competition anxiety: Comparison of pre and post intervention assessments of experimental group



A significant ( $P < 0.001$ ) t-value is apparent in table 6.31. This means that the variable (sport competition anxiety) has been varied significantly. The direction of the change could be understood by comparing the group mean, before intervention it was 69.50 and it has been decreased to 56.25. Therefore in this stage it could be inferred that sport competition anxiety of the experimental group has been reduced, the hypothesis is accepted.

Even though it is reduced one cannot conclude that the variation is due to treatment effect, for extraneous variables might have contributed to the present result .So that the control group is also analyzed to confirm the result.

**Before and after intervention comparison of control group on sport competition anxiety**

Hypothesis

*There will be significant difference between before and after intervention assessment of control group on sport competition anxiety.*

The comparison of the status of the control group on sport competition anxiety, i.e., before and results of the comparison of means are given in table 6.32 and figure 6.2.

**Table 6.32**

Mean, standard deviation and t-value of control group on sport competition anxiety (before and after intervention, N = 8)

Variable	Pre Intervention		Post Intervention		t-value
	Mean	SD	Mean	SD	
Sport competition anxiety	70.38	3.70	67.88	4.94	1.852

t-value is not significant

**Figure 6.2**

Sport competition anxiety: Comparison of pre and post intervention assessments of control group

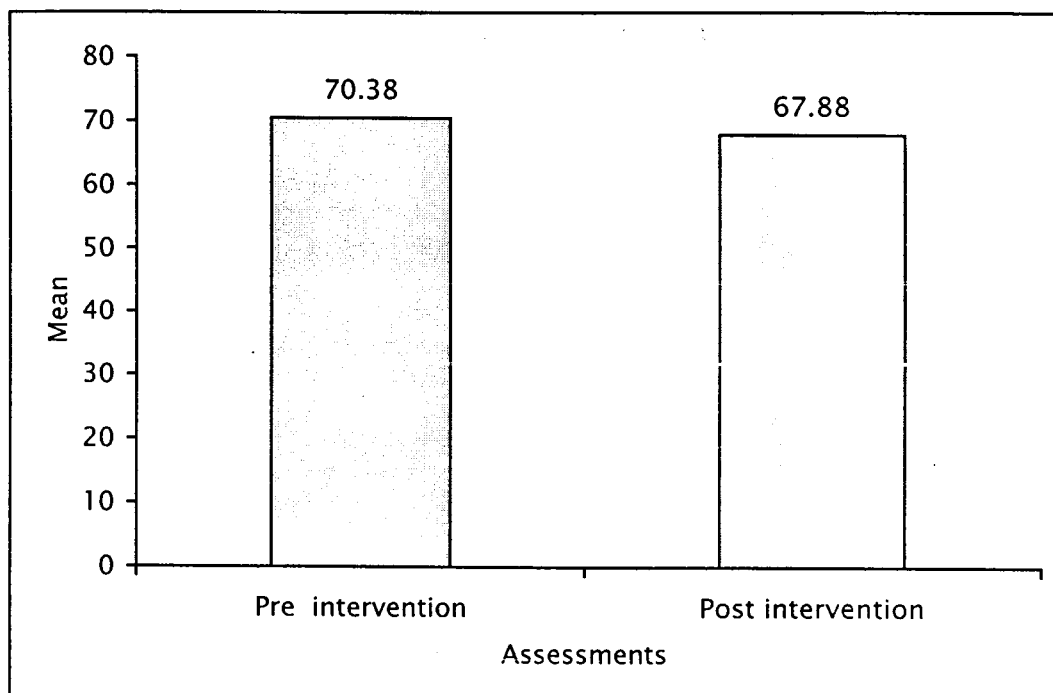


Table 6.32 reveals that the pre-intervention status of the control group on the variable sport competition anxiety was 70.38, as indicated by the group mean. Post-intervention assessment shows that the group mean has been slightly reduced to 67.88. The t-value for the mean difference is not statistically significant (table 6.32), considering the above said result of t-test on experimental and control group, it can be asserted that the observed significant mean difference between the pre and post assessments of experimental group is due to the treatment effect.

Since the experimental group was subjected to intervention while the control group was devoid of such intervention the observed decrement in the mean after the treatment is attributed to the effect of intervention regarding the absence of such a reduction in the mean of the control group. A comparatively slight and statistically insignificant reduction of the mean of control group in the post intervention assessment could be attributed to effects of extraneous variables.

### **After intervention comparison of experimental and control group on sport competition anxiety**

#### Hypothesis

*There will be significant difference between experimental and control groups after intervention on sport competition anxiety*

As the intervention is intended to reduce sport competition anxiety, it is interesting to examine the mean difference between the post intervention assessments of experimental and control group. The result of t-test is presented in table 6.33 and figure 6.3.

**Table 6.33**

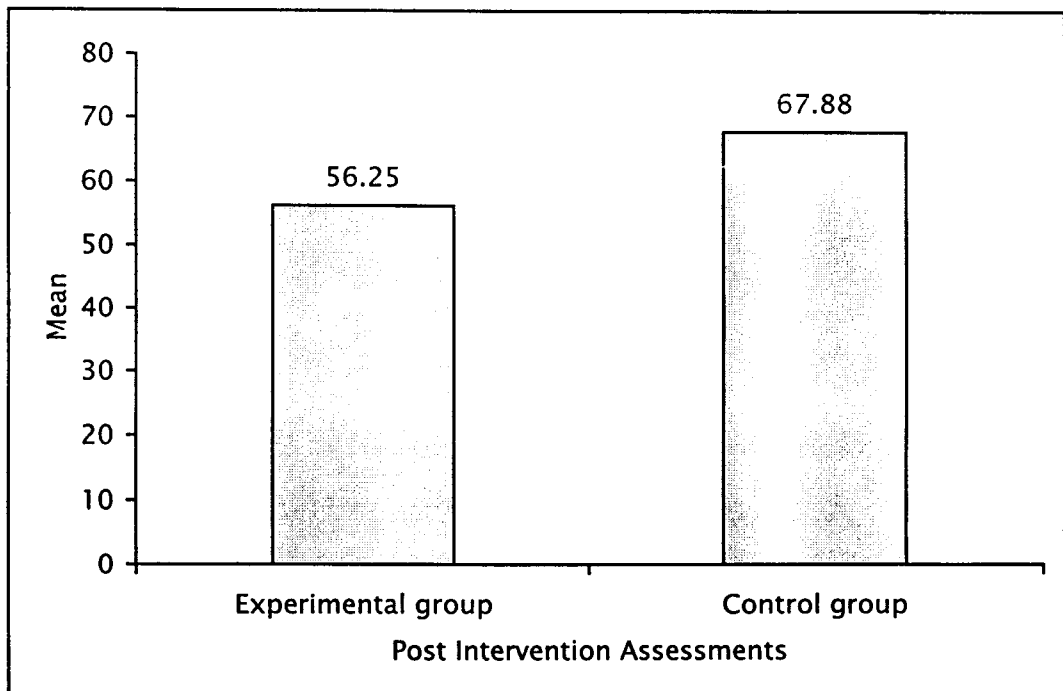
Means, standard deviations and t-value of experimental and control group on sport competition anxiety (after intervention, N=8)

Variable	Experimental Group		Control Group		t-value
	Mean	SD	Mean	SD	
Sport Competition Anxiety	56.25	6.45	67.88	4.95	6.76*

\* Significant at 0.001level

**Figure 6.3**

Sport competition anxiety: comparison of post intervention assessments of experimental and control groups



A highly significant ( $p < 0.001$ ) t-value (6.76) was estimated for the mean difference between experimental and control group

after the intervention. Table 6.33 further clarifies that the mean of experimental group (56.25) is lower than the control group (67.88). This result is a clear indication of the effectiveness of the intervention and it supports the above finding regarding pre and post intervention comparison of mean separately for experimental and control group.

### **6.3.2. Attitude towards sport injury**

In this section the results of the analysis for examining the effectiveness newly developed intervention to control another debilitating factor, i.e., attitude towards sport injury is discussed.

#### **Before and after intervention comparison of experimental group on attitude towards sport injury**

Hypothesis

*There will be significant difference between before and after intervention assessment of experimental group on attitude towards sport injury*

The results of t-test for comparing the experimental group before and after intervention are presented in table 6.34. The initial status of the experimental group on attitude towards sport injury is indicated by the mean. And the mean of experimental

group was found to be 60.13. After the intervention the mean of the group was estimated as 44.88 (table 6.34 and figure 6.4).

**Table 6.34**

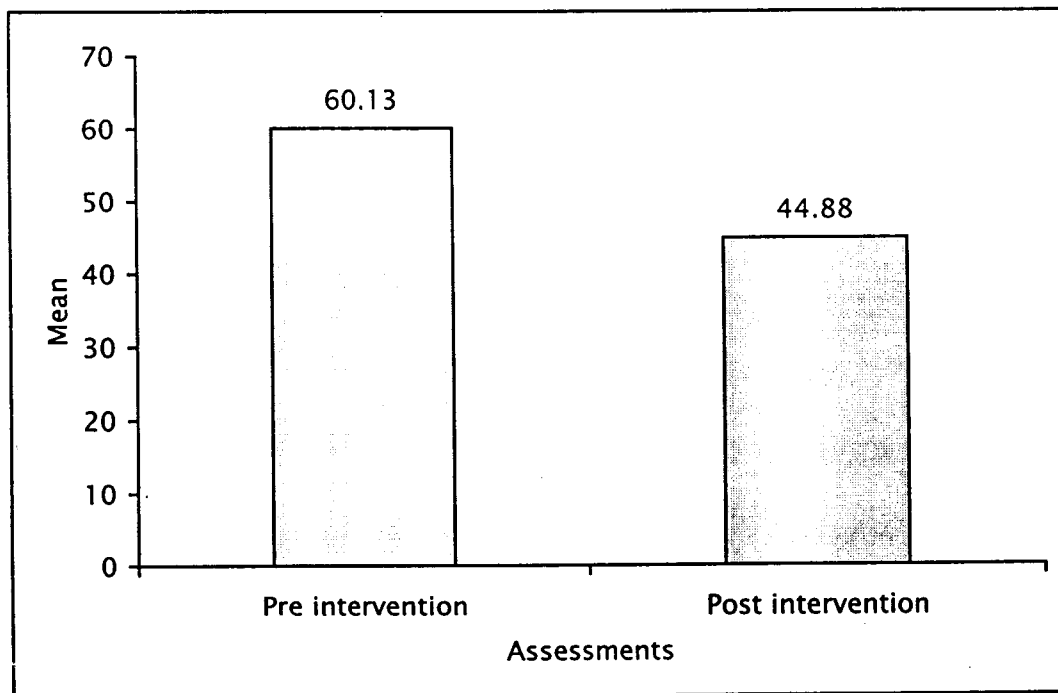
Means, standard deviations and t-value of experimental group on attitude towards sport injury (before and after intervention, N = 8)

Variable	Pre Intervention		Post Intervention		t-value
	Mean	SD	Mean	SD	
Attitude towards sport injury	60.13	7.36	44.88	7.10	9.73*

\* Significant at 0.001 level

**Figure 6.4**

Attitude towards sport injury: Comparison of pre and post intervention assessments of experimental group



The apparent mean difference is statistically proved as indicated by the highly significant ( $p < 0.001$ ) t-value i.e., 9.73. Regardless of the comparison between experimental and control group, it could be assessed that the experimental group has been changed after the intervention on the variable attitude towards sport injury. More precisely, the mean of the experimental group before the administration of the intervention programme was 60.13 has come down to 44.88. It reveals that either the intervention or some other phenomenon or both of them has influenced the subjects' attitude towards sport injury. To confirm that the change in attitude of the experimental group is due to the treatment provided by the experimenter, the pre and post intervention comparison of the control group was performed.

### **Before and after intervention comparisons of control group on attitude towards sport injury**

#### Hypothesis

*There will be significant difference between before and after intervention assessment of control group on attitude towards sport injury*

The results of t-test employed for the comparison of pre and post intervention mean of control group on attitude towards sport injury are presented in table 6.35 and figure 6.5.

**Table 6.35**

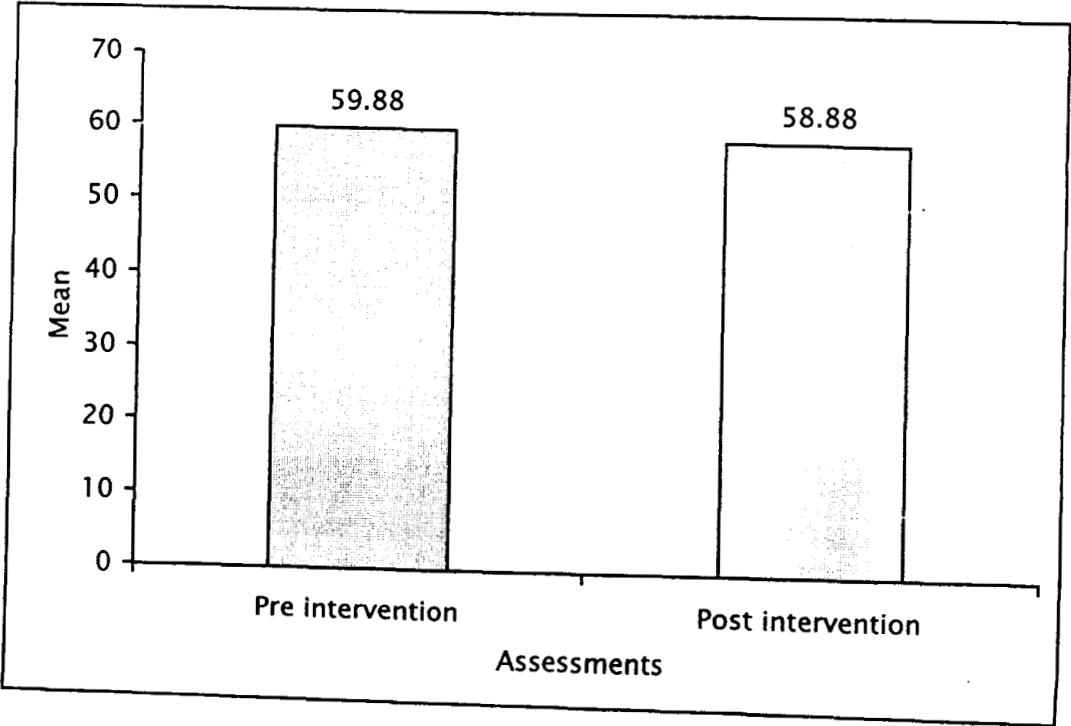
Mean, standard deviation and t-value of control group on attitude towards sport injury (before and after intervention, N = 8)

Variable	Pre intervention		Post intervention		t-value
	Mean	SD	Mean	SD	
Attitude towards sport injury	59.88	7.36	58.88	7.85	1.528

\*t-value not significant

**Figure 6.5**

Attitude towards sport injury: Comparison of pre and post intervention assessments of control groups



The slight difference between the pre-test and post-test mean is negligible as indicated by an insignificant t-value (table 6.35). Therefore, it is clear that the presence of intervention makes notable mean difference in experimental group whereas the absence of such an intervention does not make any change in control group. These conditions satisfy to establish a course-effect relationship between the intervention and the notable change of the experimental group on the variable 'attitude towards sport injury'.

### **After intervention comparison of experimental and control group on attitude towards sport injury**

#### Hypothesis

*There will be significant difference between experimental and control groups after intervention on attitude towards sport injury*

Table 6.36 and figure 6.6 depict the results of t-test for comparing the experimental and control group on the variable concerned after the intervention.

**Table 6.36**

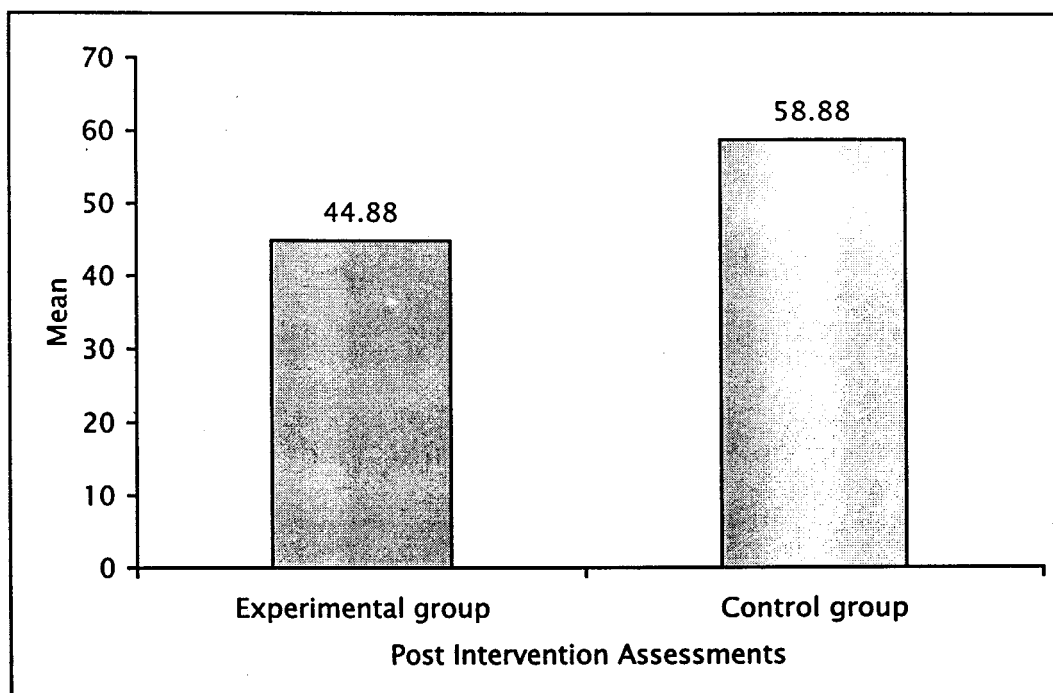
Means, standard deviations and t-value of experimental and control group on attitude towards sport injury (after intervention, N = 8)

Variable	Experimental Group		Control Group		t-value
	Mean	SD	Mean	SD	
Attitude towards sport injury	44.88	6.60	58.88	7.85	3.230*

\*Significant at 0.05 level

**Figure 6.6**

Attitude towards sport injury: Comparison of post intervention assessments of experimental and control groups



The comparison between experimental and control group shows that the experimental group is significantly low in attitude towards sport injury. The mean of experimental group is 44.88 whereas that of the control group is 58.88. The t-value is computed as 3.23, which is statistically significant ( $p < 0.05$ ). This result underlines the above inference that the intervention is adequate enough to control the debilitating factor 'attitude towards injury'. In the present investigation, attitude was measured on the negative direction i.e., the higher the score the higher the negative attitude towards sport injury. As mentioned above the mean of the experimental group before the intervention has come down after the administration of the intervention which denotes that the newly developed intervention is effective in reducing negative attitude towards sport injury, i.e., one of the factors debilitating sport performance.

### **6.3.3. Sport aggression**

Another factor debilitating sport performance, sport aggression was also examined to find out the efficacy of newly developed intervention on this variable:

## **Before and after intervention comparison of experimental group on sport aggression**

### Hypothesis

*There will be significant difference between before and after intervention assessment of experimental group sport aggression*

To compare the experimental group before and after intervention on sport aggression, t-test was employed. The results of the analysis are given in table 6.37 and figure 6.7.

**Table 6.37**

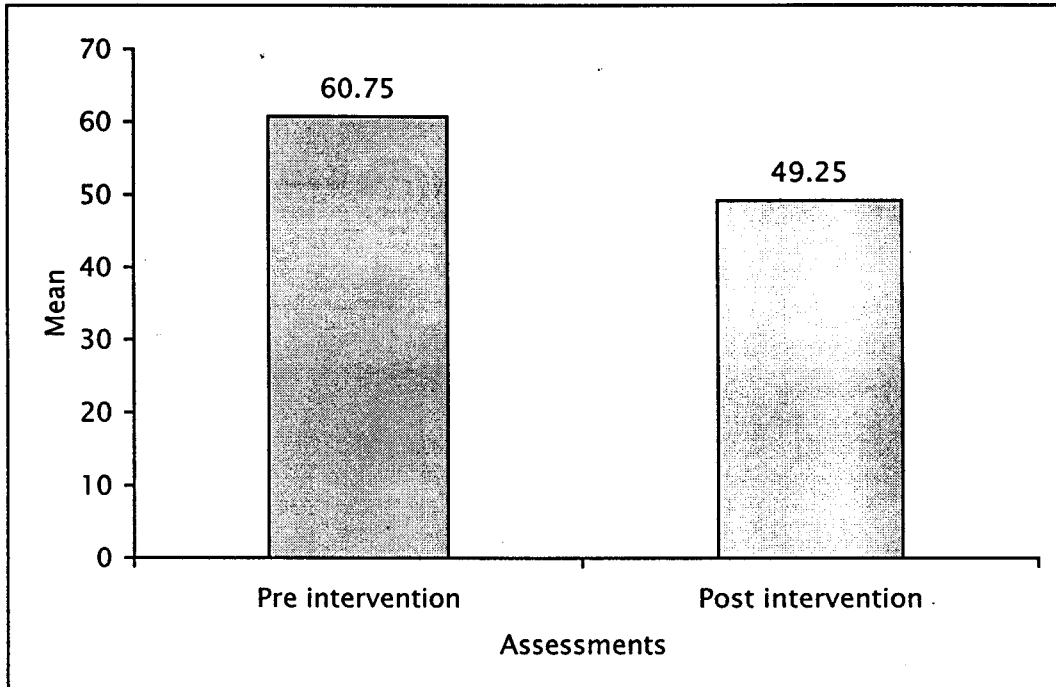
Means, standard deviations and t-value of experimental group on sport aggression (before and after intervention, N = 8)

Variable	Pre Intervention		Post Intervention		t-value
	Mean	SD	Mean	SD	
Sport aggression	60.75	6.32	49.25	7.40	8.359*

\*Significant at 0.001 level

**Figure 6.7**

Sport aggression: Comparison of pre and post intervention assessments of experimental group



The table shows that mean of the experimental group before intervention was 60.75. In the post intervention assessment it was found to be 49.25 i.e., sport aggression has been reduced after the intervention. This difference is statistically significant as indicated by the high t-value (8.359), which is significant at 0.001 level.

## **Before and after intervention comparison of control group on sport aggression**

### Hypothesis

*There will be significant difference between before and after intervention assessment of control group on sport aggression*

The comparison of the status of the control group on sport aggression i.e., before and after intervention was performed. The results of the comparison of mean are presented in table 6.38 and figure 6.8.

**Table 6.38**

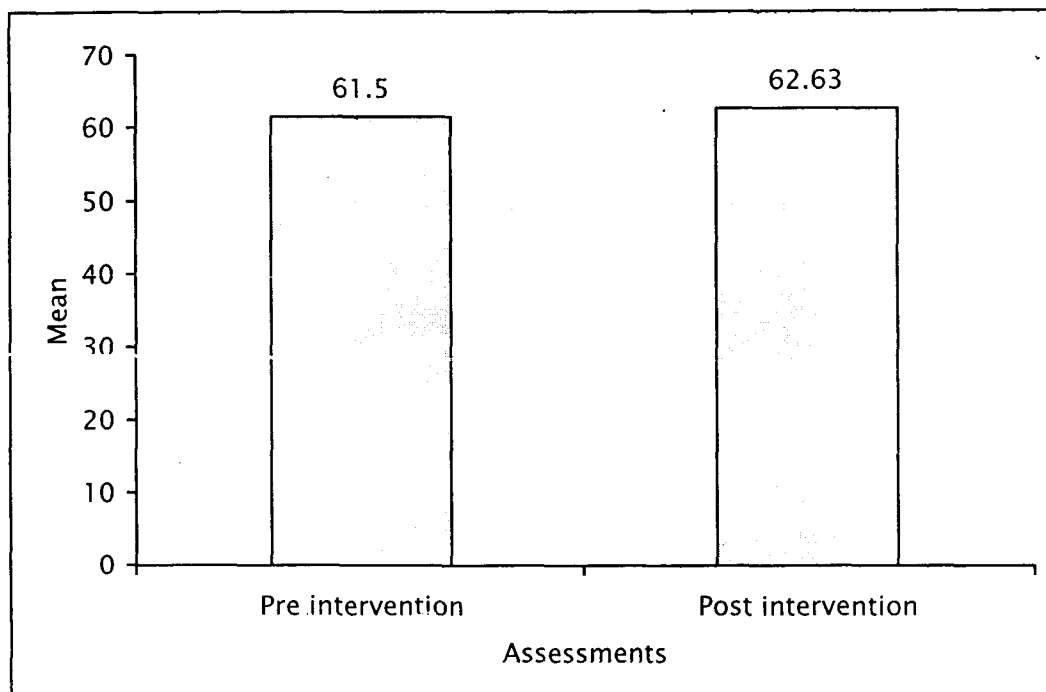
Mean, standard deviation and t-value of control group on sport aggression (before and after intervention, N = 8)

Variable	Pre Intervention		Post Intervention		t-value
	Mean	SD	Mean	SD	
Sport aggression	61.50	6.41	62.63	6.28	0.336

t-value is not significant.

**Figure 6.8**

Sport aggression: Comparison of pre and post intervention assessments of control group



It is clear from the table that the pre-intervention status of the control group on the variable sport aggression was 61.50, as it is indicated by the group mean. Post intervention assessment shows that the group mean has been slightly increased to 62.63. However, the t-value for this mean difference is statistically insignificant. The logical inference from these results is that the mean difference noted in experimental group could be attributed to the influence of intervention. As the post test mean of the experimental group has been reduced from that of the pre test, it

can be concluded that the efficacy of the intervention to control sport aggression is guaranteed.

**After intervention comparison of experimental and control group on sport aggression**

Hypothesis

*There will be significant difference between experimental and control groups after intervention on sport aggression*

t-test was employed to compare the experimental and control group regarding the post tests. The results of t-analysis are given in table 6.39 and figure 6.9.

**Table 6.39**

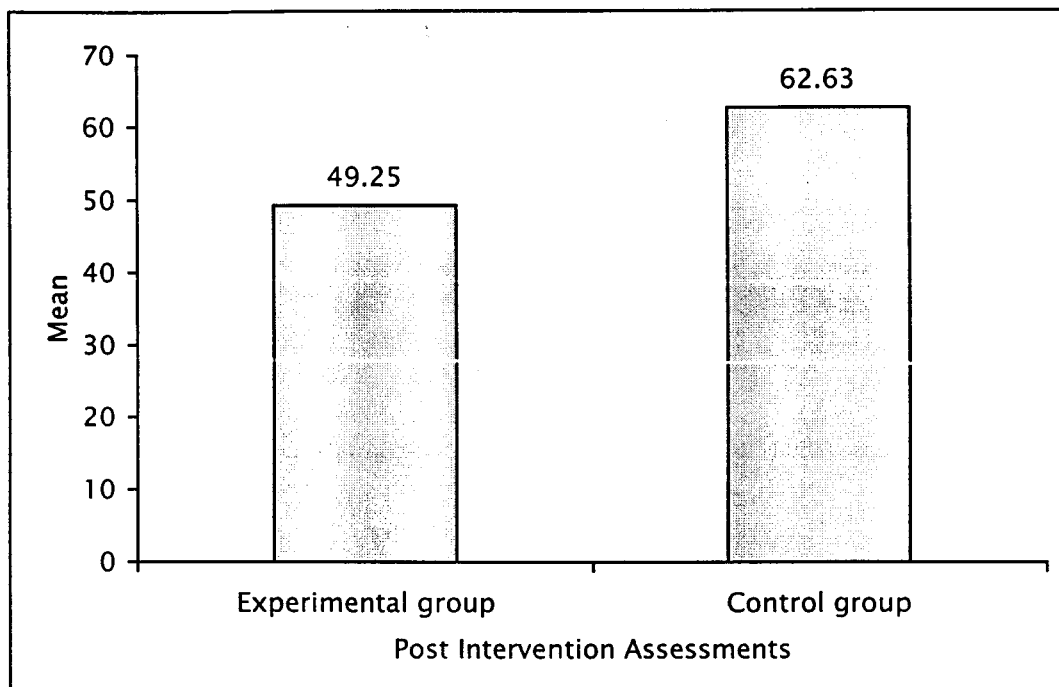
Means, standard deviations and t-value of experimental and control group on sport aggression (after intervention, N = 8)

Variable	Experimental Group		Control Group		t-value
	Mean	SD	Mean	SD	
Sport aggression	49.25	7.40	62.63	6.28	3.374*

\*Significant at 0.05 level

**Figure 6.9**

Sport aggression: Comparison of post intervention assessments of experimental and control groups



As the control group did not receive any kind of treatment, while the experimental group received intervention, in the post-test of the groups show difference in mean. The mean of experimental group on sport aggression is 49.25. But in case of control group it is 62.63. The t-value is 3.374, which is significant at 0.05 level. It could be inferred from these results along with the early mentioned finding that the intervention is effective enough to reduce sport aggression.

From the above results it can be confidently asserted that the newly developed intervention strategy based on theatre is quite adequate to control the debilitating factors in sport performance, the competition anxiety, negative attitude towards sport injury, and sport aggression. Many investigators have tried to figure out therapeutic use of drama/ theatre upon many specific group such as disturbed adolescence (Gennings and Gersie, 1987); people with mental handicap (Brudenell, 1987); elderly people (Langley, 1987); psychiatric patients (Whitelock, 1987; Mitchel, 1987) etc.

An exploration of the therapeutic use of the drama in alcoholics by the researcher proved an additional empirical support to the potential of theatre (Santhosh, et al., 2003).

The effectiveness of psychotherapeutic use of theatre to control psychological factors debilitating sport performance has been experimentally supported by the present investigation. One of the most appealing reasons for a positive result could be attributed to the striking similarities between the dynamics of sport and theatre (Lowe, 1977; Schechner, 1988).

Chapter 7

# Summary, Conclusions and Suggestions

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This chapter summarises the entire work including major findings, conclusions and suggestions for further research.

Broad objectives of the present study were:

1. To identify and explore the psychological factors debilitating sport performance, and
2. To formulate a psychological intervention strategy to control those debilitating factors.

### **Brief summary of the investigation**

To meet the objectives, three interlinked studies were conducted as given below.

### **Study 1: Identification of Psychological Factors Debilitating Sport Performance**

#### ***Objective***

To identify the psychological factors debilitating sport performance using interview method.

#### ***The sample***

The sample comprised of coaches, physical educators, and sport persons from various disciplines all over Kerala. Sample

were selected using convenient sampling method. Altogether 62 subjects were participated in the study

### ***Type of interview***

Structured interview was used for collecting information

### ***Interview schedule***

Interview schedule consisted of only one open-ended question, “what are the most common psychological factors debilitating sport performance?”

### ***Analysis of the data***

Responses of all the subjects were tabulated and descriptive statistical procedures like frequency and percentage were used to summarize the data.

### ***Major findings of study1***

The major factors debilitating sport performance were identified as:

1. Sport competition trait anxiety
2. Negative attitudes towards injury
3. Sport aggression.

## **Study 2: An analysis of factors debilitating sport performance.**

### ***Objective***

1. To study the relationships among factors debilitating sport performance such as: sport competition anxiety, attitude towards sport injury, and sport aggression.
2. To study the influence of sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression.

### ***Sample***

Stratified sampling has used to select the sample. The sample consists of 132 sport persons, which has been drawn from various schools, colleges, sport schools and physical education centers from all over Kerala.

### ***The tools used***

The following tools were developed and used to explore the concerned variables.

1. Inventory for Sport Competition Anxiety (ISCA, Santhosh and Jayan, 2003)

2. Sport Injury Attitude Scale (SIAS, Santhosh and Jayan, 2003)
3. Inventory for Sport Aggression (ISA, Santhosh and Jayan, 2003)
4. Personal Information Schedule (PIS)

Statistical techniques used

The major statistical techniques used were:

1. Pearson Product Moment Correlation
2. Two-Way ANOVA

### ***Major findings of study 2***

#### *Relationships among the variables*

1. There is significant relationship between sport competition anxiety and attitude towards sport injury.
2. There is significant relationship between sport competition anxiety and sport aggression.
3. There is significant relationship between attitude towards sport injury and sport aggression.

*The influence of sex and nature of sport on sport competition anxiety, attitude towards sport injury, and sport aggression*

1. Sex and nature of sport are found to have main effects on sport competition anxiety, but there is no interaction.
2. Sex and nature of sport are found to have main effects on attitude towards sport injury , but there is no interaction.
3. Sex and nature of sport are found to have neither main effects or interaction on sport aggression.

**Study 3: Effectiveness of psychotherapeutic use of theatre to control factors debilitating sport performance.**

***Objective***

To test the efficacy of newly developed intervention strategy to control factors such as sport competition anxiety, attitude towards sport injury and sport aggression that debilitate sport performance.

***Sample***

Multistage sampling was employed to select the final sample for one experimental group and one control group consisted of 14 subjects in each group.

## ***Research Design***

Before match-After -Design was used.

## ***The tools used***

For study 3, the investigator used the following tools.

1. Inventory for Sport Competition Anxiety (ISCA, Santhosh and Jayan, 2003).
2. Sport Injury Attitude Scale (SIAS, Santhosh and Jayan, 2003).
3. Inventory for Sport Aggression (ISA, Santhosh and Jayan, 2003), and
4. Personal Information Schedule (PIS).

## ***Procedure***

Pre-intervention assessment was performed before commencing the intervention. The intervention was performed on all the members of experimental group at a time. The total number of sessions was seven. Each session had an average duration of 90 minutes. It took one week to complete the entire programme (one session per day). The intervention was developed based on the

psychotherapeutic aspects of theatre. The intervention strategy was developed in such a fashion by which all the three debilitating factors are targeted to be eliminated through a single administration comprising seven sessions. The post-intervention assessment was performed after 30 days.

### ***Statistical techniques used***

t-Test was used to estimate the significance of mean difference between the experimental and control groups before and after treatment. The data was analysed focusing the three factors separately.

### ***Major findings of study 3***

The newly developed intervention strategy based on psychotherapeutic aspects of theatre is quite adequate to control the factors debilitating sport performance such as:

1. Sport competition trait anxiety,
2. Attitude towards sport injury, and
3. Sport aggression.

## **Suggestions for further research**

With regard to the findings of the present enquiry the following are certain suggestions for further investigation in the area concerned.

1. Other psychological factors debilitating sport performance may be addressed employing various methods rather than interview method.
2. Adequate sport specific non-verbal /performance psychological tests may be developed to meet the objective of the discipline, sport psychology.
3. The relationship between debilitating factors and actual sport performance may be studied.
4. The efficacy of the intervention may be examined on other variables.
5. Generalization of the findings may be enhanced by conducting studies on different samples.
6. The psychotherapeutic aspects of theatre may be investigated in other spheres of life.

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# Appendices

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7

2-10-13

# INVENTORY FOR SPORT COMPETITION ANXIETY (ISCA) (DRAFT SCALE)

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Department of Psychology  
University of Calicut

നിർദ്ദേശങ്ങൾ:

സ്പോർട്സ് ജീവിതത്തിൽ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവ ഓരോന്നിനോടും താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു എന്നറിയുകയാണ് ഈ ചോദ്യാവലിയുടെ ലക്ഷ്യം. ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോടുള്ള നിങ്ങളുടെ പ്രതികരണം അതാതിനു നൽകിയിട്ടുള്ള അഞ്ച് കളങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായതിൽ ശരി അടയാളം (✓) വരച്ച് രേഖപ്പെടുത്തുക. യോജിക്കാനോ വിയോജിക്കാനോ കഴിയാത്ത അത്യുപരിയായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	സംശയാതമം	സംശയാതമം	മിശ്രസംശയാതമം	സംശയാതമം	സംശയാതമം
1. മത്സരത്തെക്കുറിച്ച് ഓർക്കുന്നതുതന്നെ ഭീതിജനകമാണ്.					
2. നന്നായി കളിക്കാൻ കഴിയുമോ എന്ന് മത്സരത്തിന് മുമ്പ് സംശയിക്കാറുണ്ട്.					
3. മത്സരത്തിന് തൊട്ടുമുമ്പ് കൈകാലുകൾ വിറയ്ക്കുന്നതായി തോന്നാറുണ്ട്.					
4. മത്സരം എത്രയും പെട്ടെന്ന് തീർന്നു കിട്ടിയാൽ മതിയെന്ന് തോന്നാറുണ്ട്.					
5. മത്സരത്തിന് മുമ്പ് അഭ്യസിച്ച തന്ത്രങ്ങളൊന്നും ഓർമ്മ വരുന്നില്ലല്ലോ എന്ന് തോന്നാറുണ്ട്.					
6. മത്സരത്തിനുമുമ്പ് എന്റെ കാലുകളിൽ അമിതമായി തണുപ്പുതോന്നാറുണ്ട്.					
7. മത്സരത്തിനുമുമ്പ് വയറ്റിൽ തണുപ്പുതോന്നാറുണ്ട്.					
8. മത്സരത്തിനുമുമ്പ് കാലുകൾ ഉറയ്ക്കാറില്ല.					
9. മത്സരത്തിനുമുമ്പ് പഠിച്ച് പരിശീലിച്ച തന്ത്രങ്ങൾ മറന്നുപോകുന്നതായി തോന്നാറുണ്ട്.					
10. മത്സരത്തിന് തൊട്ടുമുമ്പ് മത്സരത്തിൽ പങ്കെടുക്കേണ്ടിയിരുന്നില്ല എന്നു തോന്നാറുണ്ട്.					

	ശക്തിയാൽ സ്വീകൃതയോ ശക്തിയാൽ	സ്വീകൃതയോ ശക്തിയാൽ	സ്വീകൃതയോ ശക്തിയാൽ	സ്വീകൃതയോ ശക്തിയാൽ	സ്വീകൃതയോ ശക്തിയാൽ
11. മത്സരത്തിന് മുമ്പ് എന്റെ ശക്തി മുഴുവൻ നഷ്ടപ്പെടുന്നതായി തോന്നാറുണ്ട്.					
12. മത്സരത്തിനുമുമ്പ് തലയ്ക്കകത്ത് പെരുപ്പ് അനുഭവപ്പെടാറുണ്ട്.					
13. മത്സരത്തിന് തൊട്ടുമുമ്പ് ഒന്നിലുംതന്നെ എനിക്ക് ശ്രദ്ധകിട്ടാറില്ല.					
14. അക്ഷമ കാരണം എങ്ങനെയെങ്കിലും കളി വേഗം തുടങ്ങിയാൽ മതിയെന്ന് തോന്നാറുണ്ട്.					
15. മത്സരത്തിനുമുമ്പ് ശരീരം തളർന്നതായി തോന്നാറുണ്ട്.					
16. മത്സരത്തിന് മുമ്പ് എനിക്ക് മാനസിക പിരിമുറുക്കം അനുഭവപ്പെടാറുണ്ട്.					
17. മത്സരത്തിനുമുമ്പ് എത്ര ശ്രമിച്ചാലും മനസ്സിനെ ശാന്തമാക്കുവാൻ കഴിയില്ല.					
18. ഈ പരിഭ്രമം ഇല്ലെങ്കിൽ കുറച്ചുകൂടി നന്നായി ചെയ്യുവാൻ കഴിഞ്ഞേനെ എന്നു തോന്നാറുണ്ട്.					
19. മത്സരഫലം പ്രതികൂലമാകുമോ എന്ന് വിചാരിച്ച് മത്സരത്തിന് മുമ്പ് വിഷമിക്കാറുണ്ട്.					
20. മത്സരങ്ങളെ മാനസികമായി നേരിടുവാൻ എനിക്കറിയില്ല.					
21. മത്സരമെന്നാൽ എന്നെ സംബന്ധിച്ചിടത്തോളം പിരിമുറുക്കമാണ്.					
22. മത്സരിക്കുന്നതിന് തൊട്ടുമുമ്പ് സാധാരണയിൽ കവിഞ്ഞ് എന്റെ ഹൃദയം ഇടിക്കുന്നത് ഞാൻ ശ്രദ്ധിച്ചിട്ടുണ്ട്.					
23. മത്സരിക്കുന്നതിന് മുമ്പ് വയറ് കത്തുന്നതുപോലെ തോന്നാറുണ്ട്.					
24. മത്സരമെന്ന് കേൾക്കുമ്പോഴേ എനിക്ക് വയറിലൊരു കാളലാണ്.					
25. മത്സരത്തിന് മുമ്പ് അമിതമായി വിയർക്കാറുണ്ട്.					
26. മത്സരത്തിന് മുമ്പ് എന്റെ ശരീരം വിറയ്ക്കാറുണ്ട്.					
27. മത്സരത്തിനുമുമ്പ് ശരീരമാകമാനം വലിഞ്ഞു മുറുകുന്ന തായി തോന്നാറുണ്ട്.					

	ശക്തിയായി സംഭരിക്കുന്ന തോറോ	സംഭരിക്കുന്ന തോറോ	മി അപ്രാപ്യ അപ്രാപ്യ	സംഭരിക്കുന്ന തോറോ	സംഭരിക്കുന്ന തോറോ
28. മത്സരത്തിന് തൊട്ടുമുമ്പ് ഇടയ്ക്കിടെ മലമുത്ര വിസർജ്ജനത്തിന് തോന്നാറുണ്ട്.					
29. മത്സരത്തിന് മുമ്പ് ശ്വാസനത്തിന്റെ വേഗത അസാധാരണമായി കൂടാറുണ്ട്.					
30. മത്സരത്തിനുമുമ്പ് അനാവശ്യചിന്തകളെ നിയന്ത്രിക്കുവാൻ എനിക്ക് കഴിയാറില്ല.					
31. പരാജയഭീതി മത്സരത്തിനുമുമ്പ് എന്നെ അമിതമായി വലയ്ക്കാറുണ്ട്.					
32. മത്സരത്തിനു മുമ്പ് ശ്വാസംമുട്ടുന്നതുപോലെ തോന്നാറുണ്ട്.					
33. മത്സരത്തിന് മുമ്പ് കുറച്ചുസമയത്തേക്കു പോലും എനിക്ക് അടങ്ങിയിരിക്കുവാൻ കഴിയാറില്ല.					
34. എന്താണെന്നറിയാത്ത ഒരു ആധി മത്സരത്തിനുമുമ്പ് എന്നെ പിടികൂടാറുണ്ട്.					
35. മത്സരത്തിനുമുമ്പ് ഭയങ്കര ക്ഷീണം തോന്നാറുണ്ട്.					
36. മത്സരിക്കുന്നതിന് മുമ്പ് എനിക്ക് തൊണ്ട വരളുന്നതായി തോന്നാറുണ്ട്.					

Name :  
Age :  
Sex :  
Discipline :  
Institute :  
Place :

# INVENTORY FOR SPORT COMPETITION ANXIETY (ISCA)

Santhosh, A.M. & Jayan, C.

Department of Psychology  
University of Calicut  
(2003)

നിർദ്ദേശങ്ങൾ:

സ്പോർട്സ് ജീവിതത്തിൽ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവ ഓരോന്നിനോടും താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു എന്നറിയുകയാണ് ഈ ചോദ്യാവലിയുടെ ലക്ഷ്യം. ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോടുള്ള നിങ്ങളുടെ പ്രതികരണം അതാതിനു നൽകിയിട്ടുള്ള അഞ്ച് കളങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായതിൽ ശരി അടയാളം (✓) വെച്ച് രേഖപ്പെടുത്തുക. യോജിക്കാനോ വിധോജിക്കാനോ കഴിയാത്ത അത്യപൂർവ്വമായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	പ്രതികരണശക്തിയുള്ളതല്ല	പ്രതികരണശക്തിയുള്ളതല്ല	അഭിപ്രായമില്ല	പ്രതികരണശക്തിയുള്ളതല്ല	പ്രതികരണശക്തിയുള്ളതല്ല
1. മത്സരം എത്രയും പെട്ടെന്ന് തീർന്നു കിട്ടിയാൽ മതിയെന്ന് തോന്നാറുണ്ട്.					
2. മത്സരിക്കുന്നതിന് മുമ്പ് എനിക്ക് തൊണ്ട വരളുന്നതായി തോന്നാറുണ്ട്.					
3. മത്സരത്തിന് മുമ്പ് എന്റെ ശക്തി മുഴുവൻ നഷ്ടപ്പെടുന്നതായി തോന്നാറുണ്ട്.					
4. അക്ഷമ കാരണം എങ്ങനെയെങ്കിലും കളി വേഗം തുടങ്ങിയാൽ മതിയെന്ന് തോന്നാറുണ്ട്.					
5. നന്നായി കളിക്കാൻ കഴിയുമോ എന്ന് മത്സരത്തിന് മുമ്പ് സംശയിക്കാറുണ്ട്.					
6. മത്സരത്തിന് മുമ്പ് എനിക്ക് മാനസിക പിരിമുറുക്കം അനുഭവപ്പെടാറുണ്ട്.					
7. മത്സരഫലം പ്രതികൂലമാകുമോ എന്ന് വിചാരിച്ച് മത്സരത്തിന് മുമ്പ് വിഷമിക്കാറുണ്ട്.					
8. മത്സരിക്കുന്നതിന് തൊട്ടുമുമ്പ് സാധാരണയിൽ കവിഞ്ഞ് എന്റെ ഹൃദയം ഇടിക്കുന്നത് ഞാൻ ശ്രദ്ധിച്ചിട്ടുണ്ട്.					
9. മത്സരത്തിന് തൊട്ടുമുമ്പ് ഒന്നിലുംതന്നെ എനിക്ക് ശ്രദ്ധകിട്ടാറില്ല.					

	ശക്തിതായി യോജിക്കുന്നു	യോജിക്കുന്നു	അപ്രപായമില്ല	വിയോജിക്കുന്നു	ശക്തിതായി വിയോജിക്കുന്നു
10. മത്സരിക്കുന്നതിന് മുമ്പ് വയറ് കത്തുന്നതുപോലെ തോന്നാറുണ്ട്.					
11. മത്സരത്തിന് മുമ്പ് അമിതമായി വിയർക്കാറുണ്ട്.					
12. മത്സരത്തിന് മുമ്പ് കുറച്ചുസമയത്തേക്കു പോലും എനിക്ക് അടങ്ങിയിരിക്കുവാൻ കഴിയാറില്ല.					
13. മത്സരത്തിന് മുമ്പ് എന്റെ ശരീരം വിറയ്ക്കാറുണ്ട്.					
14. മത്സരത്തിന് തൊട്ടുമുമ്പ് ഇടയ്ക്കിടെ മലമുത്ര വിസർജ്ജനത്തിന് തോന്നാറുണ്ട്.					
15. മത്സരത്തിന് മുമ്പ് അഭ്യസിച്ച തന്ത്രങ്ങളൊന്നും ഓർമ്മ വരുന്നില്ലല്ലോ എന്ന് തോന്നാറുണ്ട്.					
16. മത്സരത്തിന് മുമ്പ് ശ്വസനത്തിന്റെ വേഗത അസാധാരണമായി കൂടാറുണ്ട്.					

Name :  
Age :  
Sex :  
Discipline :  
Institute :  
Place :

- നന്ദി -

**SPORT INJURY ATTITUDE SCALE (SIAS)**  
(DRAFT SCALE)

Santhosh, A.M. & Jayan, C.

Department of Psychology  
University of Calicut

നിർദ്ദേശങ്ങൾ:

സ്പോർട്സ് ജീവിതത്തിൽ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവ ഓരോന്നിനോടും താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു എന്നറിയുകയാണ് ഈ ചോദ്യാവലിയുടെ ലക്ഷ്യം. ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോടുള്ള നിങ്ങളുടെ പ്രതികരണം അതാതിനു നൽകിയിട്ടുള്ള അഞ്ച് കളങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായതിൽ ശരി അടയാളം (✓) വെച്ച് രേഖപ്പെടുത്തുക. യോജിക്കാനോ വിരോധിക്കാനോ കഴിയാത്ത അത്യുപരിയമായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	സംശയാസ്പദം	സംശയാസ്പദം	അപ്രായോഗികം	സംശയാസ്പദം	സംശയാസ്പദം
1. കളിക്കിടയിൽ അപകടങ്ങളെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറില്ല.					
2. അപായമുണ്ടാകുമോ എന്ന ഭയത്താൽ ചില കളികളിൽനിന്നും മാറിനിൽക്കാറുണ്ട്.					
3. കളിക്കിടയിൽ മുറിവ് പറ്റുന്നത് സ്വാഭാവികമാണ്.					
4. അപകടങ്ങളെ അധികം പേടിക്കുന്നവർക്ക് അതുണ്ടാകാൻ സാധ്യത കൂടുതലാണ്.					
5. അപകടങ്ങളിൽനിന്നും മോചിതരായി ഉയർന്ന നേട്ടങ്ങൾ കൈയ്യാക്കിയ താരങ്ങൾ എനിക്ക് പ്രചോദനമേകുന്നു.					
6. ചെറിയൊരു മുറിവുപോലും എന്നെ നിരാശനാക്കും.					
7. കളിയുടെ ഓരോ നിമിഷവും അപകടംപിണയുമോ എന്ന ചിന്ത എനിക്ക് ഉണ്ടാകാറുണ്ട്.					
8. ഉണ്ടാകാനിടയുള്ള മുറിവിനെപ്പറ്റി ഭയമുള്ളത് നല്ലതാണ്.					
9. ജയം മാത്രം മുന്നിൽകണ്ട് എന്ന് അപകടവും നേരിടാൻ ഞാൻ തയ്യാറല്ല.					
10. കായികരംഗത്തെ ചില അപകടങ്ങൾ കാണുമ്പോൾ കളി നിർത്തിയല്ലോ എന്ന് തോന്നാറുണ്ട്.					
11. വന്നുപെട്ട അപകടത്തെപ്പറ്റി അനാവശ്യമായി വിഷമിക്കുന്നത് നന്നല്ല.					

	ശബരിയാഥി യോജിക്കുന്നു	യോജിക്കുന്നു	അപായമില്ല	വിശ്വേച്ഛിക്കുന്നു	ശബരിയാഥി വിശ്വേച്ഛിക്കുന്നു
12. അപകടം പിണയുമോ എന്ന അനാവശ്യചിന്ത എന്റെ കളിയെ തടസ്സപ്പെടുത്താറുണ്ട്.					
13. അപകടമുണ്ടാകാതിരിക്കാൻ അനാവശ്യമായി മുൻകരുതലുകൾ എടുക്കാറില്ല.					
14. ഞാൻ ചെയ്യുന്നതുപോലെ മുറിവുകളെപ്പറ്റി ഇത്രയധികം വ്യാകുലപ്പെടേണ്ട കാര്യമില്ല എന്ന് എനിക്ക് തോന്നാറുണ്ട്.					
15. അപകടങ്ങൾ തരണംചെയ്യേണ്ടത് ഒരു കായികതാരത്തിന്റെ കടമയാണ്.					
16. അപകടങ്ങളുടെ കാര്യത്തിൽ ഞാനൊരു ശുഭാപ്തിവിശ്വാസിയാണ്.					
17. അപകടത്തിൽപ്പെട്ട ഒരു കായികതാരത്തെ ആർക്കും വേണ്ട.					
18. കളിക്കിടയിൽ അപകടങ്ങളെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറില്ല.					
19. കളിക്കാൻ വളരെ താല്പര്യമാണ്, പക്ഷേ അപകടം പിണഞ്ഞാലോ എന്ന പേടികൊണ്ട് കളിക്കാറില്ല.					
20. സഹകളിക്കാർക്ക് മുറിവേറ്റാൽ പിന്നീട് എനിക്ക് കളിക്കുവാൻ അമിതമായ പേടിയാണ്.					
21. ചെറിയൊരു ശാരീരികാസ്വാസ്ഥ്യം പോലും എന്റെ പ്രകടനത്തെ ബാധിക്കും.					
22. കളിക്കിടയിലെ മുറിവുകളെ നേരിടുവാൻ എനിക്ക് കഴിയുമെന്ന് തോന്നുന്നില്ല.					
23. കായികജീവിതത്തിലെ അപകടങ്ങളെ കാര്യമാക്കേണ്ടതില്ല.					
24. കായികജീവിതത്തിലെ ഏറ്റവും പ്രധാനപ്രശ്നം കളിക്കിടയിലുണ്ടാകുന്ന മുറിവുകളാണ്.					
25. മാനസികമായി തയ്യാറെടുത്താലും അപകടങ്ങളെ നേരിടുവാൻ ബുദ്ധിമുട്ടാണ്.					
26. ലക്ഷ്യം നേടുന്നതിന് അപകടങ്ങൾ ഒരു തടസ്സമാകുമെന്ന ഭയം എനിക്കില്ല.					
27. നന്നായി മത്സരിക്കാൻ കഴിഞ്ഞില്ലെങ്കിലും അപകടമൊന്നും വരല്ല എന്നാണ് എന്റെ ആഗ്രഹം.					
28. അപകടങ്ങളെക്കുറിച്ചുള്ള ഭീതി കാരണം എല്ലാം മറന്ന് മത്സരിക്കുവാൻ കഴിയാറില്ല.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിധേയമാകുന്നു	ശക്തിയായി വിധേയാകുന്നു
29. എനിക്ക് എന്തെങ്കിലും അപകടം പറ്റിയാൽ എന്നെ സഹായിക്കാൻ ആരും ഉണ്ടാകാറില്ല.					
30. അപകടങ്ങൾ എന്നെ വല്ലാതെ പേടിപ്പെടുത്തുന്നു.					
31. എത്ര വലിയ അപകടങ്ങൾ ഉണ്ടായാലും അതിനെയെല്ലാം തരണംചെയ്യാൻ എനിക്കാകും.					
32. കായികജീവിതത്തിലെ ഏതപകടവും നേരിടുവാൻ എനിക്ക് കഴിയും.					
33. അപകടങ്ങൾ ശാരീരികം എന്നതിനെക്കാൾ എന്നെ മാനസികമായി തളർത്തും.					
34. ഒരിക്കൽ അപകടം പറ്റിയാൽ പിന്നെ കുളിച്ചിട്ട് കാര്യമില്ല.					
35. വളരെ ചെറിയ അപകടംപോലും ഒരാളുടെ കായികജീവിതം തകിടംമറിയ്ക്കും.					

Name :  
Age :  
Sex :  
Discipline :  
Institute :  
Place :

**SPORT INJURY ATTITUDE SCALE (SIAS)**

**Santhosh, A.M. & Jayan, C.**

**Department of Psychology  
University of Calicut  
(2003)**

**നിർദ്ദേശങ്ങൾ:**

സ്പോർട്സ് ജീവിതത്തിൽ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവ ഓരോന്നിനോടും താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു എന്നറിയുകയാണ് ഈ ചോദ്യാവലിയുടെ ലക്ഷ്യം. ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോടുള്ള നിങ്ങളുടെ പ്രതികരണം അതാതിനു നൽകിയിട്ടുള്ള അഞ്ച് കളങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായതിൽ ശരി അടയാളം (✓) വെച്ച് രേഖപ്പെടുത്തുക. യോജിക്കാനോ വിരോധിക്കാനോ കഴിയാത്ത അത്യപൂർവ്വമായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിരോധിക്കുന്നു	ശക്തിയായി വിരോധിക്കുന്നു
1. കളിക്കിടയിൽ അപകടങ്ങളെക്കുറിച്ച് ഞാൻ ചിന്തിക്കാറില്ല.					
2. അപായമുണ്ടാകുമോ എന്ന ഭയത്താൽ ചില കളികളിൽനിന്നും മാറിനിൽക്കാറുണ്ട്.					
3. ചെറിയൊരു മുറിവുപോലും എന്നെ നിരാശനാക്കും.					
4. ജയം മാത്രം മുന്നിൽകണ്ട് എന്ത് അപകടവും നേരിടാൻ ഞാൻ തയ്യാറല്ല.					
5. വന്നുപെട്ട അപകടത്തെപ്പറ്റി അനാവശ്യമായി വിഷമിക്കുന്നത് നന്നല്ല.					
6. അപകടം പിണയുമോ എന്ന അനാവശ്യചിന്ത എന്റെ കളിയെ തടസ്സപ്പെടുത്താറുണ്ട്.					
7. അപകടങ്ങൾ തരണംചെയ്യേണ്ടത് ഒരു കായികതാരത്തിന്റെ കടമയാണ്.					
8. ചെറിയൊരു ശാരീരികാസ്വാസ്ഥ്യം പോലും എന്റെ പ്രകടനത്തെ ബാധിക്കും.					
9. ലക്ഷ്യം നേടുന്നതിന് അപകടങ്ങൾ ഒരു തടസ്സമാകുമെന്ന ഭയം എനിക്കില്ല.					
10. നന്നായി മത്സരിക്കാൻ കഴിഞ്ഞില്ലെങ്കിലും അപകടമൊന്നും വരല്ലെ എന്നാണ് എന്റെ ആഗ്രഹം.					

	ശക്തിയാധി യോജിക്കുന്നു	സ്വയംജ്ഞാനം യോജിക്കുന്നു	ജീവനായുള്ള അഭിപ്രായമില്ല	വിയോഗമില്ലാതെ വിയോഗമില്ലാതെ	ശക്തിയാധി വിയോഗമില്ലാതെ
1. അപകടങ്ങളെക്കുറിച്ചുള്ള ഭീതി കാരണം എല്ലാം മറന്ന് മത്സരിക്കുവാൻ കഴിയാറില്ല.					
12. എനിക്ക് എന്തെങ്കിലും അപകടം പറ്റിയാൽ എന്നെ സഹായിക്കാൻ ആരും ഉണ്ടാകാറില്ല.					
13. അപകടങ്ങൾ എന്നെ വല്ലാതെ പേടിപ്പിച്ചിട്ടുണ്ട്.					
14. എത്ര വലിയ അപകടങ്ങൾ ഉണ്ടായാലും അതിനെക്കുറിച്ചും തരണം ചെയ്യാൻ എനിക്കാകും.					
15. അപകടങ്ങൾ ശാരീരികം എന്നതിനെക്കാൾ എന്നെ മാനസികമായി തളർത്തും.					

Name :

Age :

Sex :

Discipline :

Institute :

Place :

- നന്ദി -

## INVENTORY FOR SPORT AGGRESSION (ISA) (DRAFT SCALE)

Santhosh, A.M. & Jayan, C.

Department of Psychology  
University of Calicut

**നിർദ്ദേശങ്ങൾ:**

സ്പോർട്സ് ജീവിതത്തിൽ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവ ഓരോന്നിനോടും താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു എന്നറിയുകയാണ് ഈ ചോദ്യാവലിയുടെ ലക്ഷ്യം. ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോടുള്ള നിങ്ങളുടെ പ്രതികരണം അതാതിനു നൽകിയിട്ടുള്ള അഞ്ച് കളങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായതിൽ ശരി അടയാളം (✓) വെച്ച് രേഖപ്പെടുത്തുക. യോജിക്കാനോ വിരോധിക്കാനോ കഴിയാത്ത അത്യുപരിയമായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിരോധിക്കുന്നു	ശക്തിയായി വിരോധിക്കുന്നു
1. കളി തോറ്റാലും വേണ്ടില്ല, എന്നെ ഉപദ്രവിച്ച കളിക്കാരന് മറുപടി കൊടുക്കാതെ എനിക്ക് സ്വസ്ഥത ഉണ്ടാകാറില്ല.					
2. ജയമാണ് പ്രധാനം, അതിന് ആരെ എന്തുചെയ്തു എന്നെന്നും വിശകലനം ചെയ്യേണ്ടതില്ല.					
3. ജയമാണ് ലക്ഷ്യമെങ്കിൽ കളിയിൽ ന്യായം, അന്യായം എന്നെന്നുമില്ല.					
4. ജയിക്കുന്നതിന് വേണ്ടി അല്പം വഴിവിട്ട കളിക്കും ഞാൻ തയ്യാറാണ്.					
5. മത്സരത്തിനതീതമായ ഒരു ദേഷ്യം പലപ്പോഴും എന്നെ അപകടത്തിൽ ചാടിക്കൊണ്ടുണ്ട്.					
6. മത്സരത്തിന്റെ ആവേശത്തിൽ എതിരാളികളുടെ വേദന ഞാൻ കണക്കിലെടുക്കാറില്ല.					
7. ചില കളിക്കാരോട് തോന്നുന്ന ദേഷ്യം മത്സരത്തിന്റെ ലക്ഷ്യംതന്നെ മാറ്റിമറിക്കൊണ്ടുണ്ട്.					
8. എതിരാളി ജയിക്കുന്നത് തടയാൻ അയാളെ ഉപദ്രവിക്കുന്നതിൽ തെറ്റില്ല.					
9. ദേഷ്യംവന്നാൽ ഞാൻ ആരാണെന്ന് നോക്കാറില്ല.					
10. കളിക്കിടയിലെ അക്രമങ്ങൾ 'ജയിക്കാൻ വേണ്ടിയാണല്ലോ' എന്ന് ന്യായീകരിക്കാവുന്നതാണ്.					

	ശക്തിയായ സംരക്ഷണ യോജന	സംരക്ഷണ യോജന	ദീർഘകാല അപരദി	സംരക്ഷണ വിഭാഗം	സംരക്ഷണ വിഭാഗം
11. എത്ര വാരിയേറിയ മത്സരമാണെങ്കിൽപോലും ഒരു പരിധിയിൽ ഞാൻ ദേഷ്യപ്പെടാറില്ല.					
12. അനാവശ്യമായ ദേഷ്യം എന്റെ കളിയെ തടസ്സപ്പെടുത്തിയതായി തോന്നിയിട്ടില്ല.					
13. കളി ജയിക്കാൻ വഴക്കുണ്ടാക്കുന്നതിനും എനിക്ക് മടിയില്ല.					
14. എതിരാളികളോടു തോന്നുന്ന എന്റെ ദേഷ്യം കയ്യാകളിയിൽ അവസാനിക്കാറുണ്ട്.					
15. എതിരാളിയെ അല്പം വേദനിപ്പിക്കേണ്ടി വന്നാലും കളി ജയിക്കുന്നതിനാണ് ഞാൻ പ്രാധാന്യം കൊടുക്കുന്നത്.					
16. കളിക്കുമ്പോൾ ഒരാളോടും എനിക്ക് വ്യക്തിപരമായി ദേഷ്യം തോന്നാറില്ല.					
17. അക്രമം ഒഴിവാക്കാനാകാത്ത പല സന്ദർഭങ്ങളും മത്സരത്തിലുണ്ട്.					
18. ജയിക്കാൻ വേണ്ടി ചില അവസരങ്ങളിൽ എതിരാളിയെ അറിഞ്ഞുകൊണ്ട് ഉപദ്രവിക്കേണ്ടിയും വരാം.					
19. അല്പസ്വല്പം കൈക്കരുത് കാണിക്കാതെ മത്സരം ജയിക്കാമെന്ന് ഞാൻ കരുതുന്നില്ല.					
20. മത്സരമാണെങ്കിൽ അല്പം ഉരസലുകൾ സ്വാഭാവികം.					
21. എതിർ കളിക്കാരനെ ശത്രുവായി ഞാൻ കണക്കാക്കുന്നു.					
22. ദേഷ്യം വന്നാൽ കളിക്കളത്തിലെ നിയമങ്ങളൊന്നും ഞാൻ നോക്കാറില്ല.					
23. മത്സരശേഷവും ചില എതിരാളികളോട് എനിക്ക് ദേഷ്യം നിലനിൽക്കാറുണ്ട്.					
24. നിയന്ത്രിക്കാനാകാത്ത ദേഷ്യം എനിക്ക് ചില കളിക്കാരോട് തോന്നാറുണ്ട്.					
25. എതിരാളികളെ പ്രോത്സാഹിപ്പിക്കുന്നവരെ ഉപദ്രവിക്കാൻ തോന്നാറുണ്ട്.					
26. ജയത്തിന് തടസ്സംനിൽക്കുന്ന എന്തിനോടും അല്പം കരുത്തുകാടി കൈകാര്യം ചെയ്യുവാൻ ശ്രമിക്കാറുണ്ട്.					
27. ആരൊക്കെ എതിർത്താലും എന്നെ ഉപദ്രവിച്ചവരെ ഞാൻ വെറുതെവിടില്ല.					

	ശക്തിയാർത്ഥം സംഭാവന	സംഭാവന	അഭിപ്രായമില്ല	സംഭാവന	ശക്തിയാർത്ഥം സംഭാവന
11. എത്ര വാശിയേറിയ മത്സരമാണെങ്കിൽപോലും ഒരു പരിധിവിട്ട് ഞാൻ ദേഷ്യപ്പെടാറില്ല.					
12. അനാവശ്യമായ ദേഷ്യം എന്റെ കളിയെ തടസ്സപ്പെടുത്തിയതായി തോന്നിയിട്ടില്ല.					
13. കളി ജയിക്കാൻ വഴക്കുണ്ടാക്കുന്നതിനും എനിക്ക് മടിയില്ല.					
14. എതിരാളികളോടു തോന്നുന്ന എന്റെ ദേഷ്യം കയ്യാങ്കളിയിൽ അവസാനിക്കാറുണ്ട്.					
15. എതിരാളിയെ അല്പം വേദനിപ്പിക്കേണ്ടി വന്നാലും കളി ജയിക്കുന്നതിനാണ് ഞാൻ പ്രാധാന്യം കൊടുക്കുന്നത്.					
16. കളിക്കുമ്പോൾ ഒരാളോടും എനിക്ക് വ്യക്തിപരമായി ദേഷ്യം തോന്നാറില്ല.					
17. അക്രമം ഒഴിവാക്കാനാകാത്ത പല സന്ദർഭങ്ങളും മത്സരത്തിലുണ്ട്.					
18. ജയിക്കാൻ വേണ്ടി ചില അവസരങ്ങളിൽ എതിരാളിയെ അറിഞ്ഞുകൊണ്ട് ഉപദ്രവിക്കേണ്ടിയും വരാം.					
19. അല്പസ്വല്പം കൈക്കരുത്ത് കാണിക്കാതെ മത്സരം ജയിക്കാമെന്ന് ഞാൻ കരുതുന്നില്ല.					
20. മത്സരമാണെങ്കിൽ അല്പം ഉരസലുകൾ സ്വാഭാവികം.					
21. എതിർ കളിക്കാരനെ ശത്രുവായി ഞാൻ കണക്കാക്കുന്നു.					
22. ദേഷ്യം വന്നാൽ കളിക്കളത്തിലെ നിയമങ്ങളൊന്നും ഞാൻ നോക്കാറില്ല.					
23. മത്സരശേഷവും ചില എതിരാളികളോട് എനിക്ക് ദേഷ്യം നിലനിൽക്കാറുണ്ട്.					
24. നിയന്ത്രിക്കാനാകാത്ത ദേഷ്യം എനിക്ക് ചില കളിക്കാരോട് തോന്നാറുണ്ട്.					
25. എതിരാളികളെ പ്രോത്സാഹിപ്പിക്കുന്നവരെ ഉപദ്രവിക്കാൻ തോന്നാറുണ്ട്.					
26. ജയത്തിന് തടസ്സംനിൽക്കുന്ന എന്തിനോടും അല്പം കരുത്തുകാടി കൈകാര്യം ചെയ്യുവാൻ ശ്രമിക്കാറുണ്ട്.					
27. ആരൊക്കെ എതിർത്താലും എന്നെ ഉപദ്രവിച്ചവരെ ഞാൻ വെറുതെവിടില്ല.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അല്പപായമില്ല	വിയോജിക്കുന്നു	ശക്തിയായി വിയോജിക്കുന്നു
28. എതിരാളികളെ ഉപദ്രവിക്കാനുള്ള വേദിയായി ഞാൻ കളിക്കളഞ്ഞെ കണക്കാക്കുന്നു.					
29. ജയിക്കാനാണെങ്കിൽക്കൂടി ആരെയെങ്കിലും ഉപദ്രവിക്കുന്നത് ശരിയല്ല.					
30. കളിക്കിടയിൽ ഞാൻ പ്രകോപിതനാകാറില്ല.					
31. ചില നല്ല അവസരങ്ങൾ മുതലാക്കാൻ എതിരാളിയെ വേദനിപ്പിച്ചാലും തെറ്റില്ല.					
32. അക്രമങ്ങൾകൊണ്ട് മാത്രം തീർക്കാവുന്ന പല പ്രശ്നങ്ങളും മത്സരത്തിലുണ്ട്.					
33. മത്സരത്തിനിടയിൽ കളി ജയിക്കാൻ എതിർകളിക്കാരനെ പലവിധത്തിലും പ്രകോപിപ്പിക്കാറുണ്ട്.					
34. മത്സരം തോൽക്കുന്ന ഘട്ടമായാൽ ഏതുവിധേനയും ആരെയെങ്കിലും ഉപദ്രവിച്ചിട്ടാണെങ്കിൽക്കൂടി ജയിക്കാൻ ശ്രമിക്കാറുണ്ട്.					
35. മത്സരം കൈവിട്ടുപോകുമ്പോൾ എതിരാളിയെ ശാരീരികമായി നശിപ്പിക്കുവാൻ തോന്നാറുണ്ട്.					
36. ചില അവസരങ്ങളിൽ കളി ജയിക്കുന്നതിനെക്കാൾ എതിരാളി വേദനിക്കുന്നത് കാണുമ്പോഴാണ് എനിക്ക് സന്തോഷം തോന്നുക.					
37. എതിരാളി മോശമായി പെരുമാറിയാൽ കളി കഴിയുമ്പോൾ അയാളെ ഉപദ്രവിക്കാനുള്ള അവസരം നോക്കി നടക്കാറുണ്ട്.					
38. പരാജയപ്പെടുമെന്ന് കണ്ടാൽ എതിരാളിയെ ചീത്തവിളിച്ചുപോകാറുണ്ട്.					
39. അല്പം ഉപദ്രവിച്ചിട്ടാണെങ്കിലും എതിരാളിയുടെ മുന്നേറ്റം തടയാൻ ഞാൻ തയ്യാറാണ്.					
40. എതിരാളിക്ക് അപകടകരമാകുമെന്ന് അറിയാമെങ്കിലും ജയിക്കാൻവേണ്ടി ചില നീക്കങ്ങളെ ഒഴിവാക്കാറില്ല.					

Name : Age: Sex:  
 Discipline : Institute:  
 Place :

# INVENTORY FOR SPORT AGGRESSION (ISA)

Santhosh, A.M. & Jayan, C.

Department of Psychology  
University of Calicut  
(2003)

**നിർദ്ദേശങ്ങൾ:**

സ്‌പോർട്സ് ജീവിതത്തിൽ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവ ഓരോന്നിനോടും താങ്കൾ എത്രമാത്രം യോജിക്കുന്നു എന്നറിയുകയാണ് ഈ ചോദ്യാവലിയുടെ ലക്ഷ്യം. ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോടുള്ള നിങ്ങളുടെ പ്രതികരണം അതാതിനു നൽകിയിട്ടുള്ള അഞ്ച് കളങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായതിൽ ശരി അടയാളം (✓) വെച്ച് രേഖപ്പെടുത്തുക. യോജിക്കാനോ വിരോധിക്കാനോ കഴിയാത്ത അത്യപൂർവ്വമായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിരോധിക്കുന്നു	ശക്തിയായി വിരോധിക്കുന്നു
1. ദേഷ്യം വന്നാൽ കളിക്കളത്തിലെ നിയമങ്ങളൊന്നും ഞാൻ നോക്കാറില്ല.					
2. ജയിക്കുന്നതിന് വേണ്ടി അല്പം വഴിവിട്ട കളിക്കും ഞാൻ തയ്യാറാണ്.					
3. എതിരാളിയെ അല്പം വേദനിപ്പിക്കേണ്ടി വന്നാലും കളി ജയിക്കുന്നതിനാണ് ഞാൻ പ്രാധാന്യം കൊടുക്കുന്നത്.					
4. മത്സരത്തിന്റെ ആവേശത്തിൽ എതിരാളികളുടെ വേദന ഞാൻ കണക്കിലെടുക്കാറില്ല.					
5. ചില അവസരങ്ങളിൽ കളി ജയിക്കുന്നതിനെക്കാൾ എതിരാളി വേദനിക്കുന്നത് കാണുമ്പോഴാണ് എനിക്ക് സന്തോഷം തോന്നുക.					
6. എതിരാളി ജയിക്കുന്നത് തടയാൻ അയാളെ ഉപദ്രവിക്കുന്നതിൽ തെറ്റില്ല.					
7. കളിക്കിടയിലെ അക്രമങ്ങൾ 'ജയിക്കാൻ വേണ്ടിയാണല്ലോ' എന്ന് ന്യായീകരിക്കാവുന്നതാണ്.					
8. കളി ജയിക്കാൻ വഴക്കുണ്ടാക്കുന്നതിനും എനിക്ക് മടിയില്ല.					
9. ജയമാണ് ലക്ഷ്യമെങ്കിൽ കളിയിൽ ന്യായം, അന്യായം എന്നൊന്നുമില്ല.					

	ശക്തിയാർ യോഗ്യരായ	സ്ത്രീയായ യോഗ്യരായ	പുരുഷന്മാർ യോഗ്യരായ	വിവിധ വർഗ്ഗക്കാർ	സ്ത്രീയായ വർഗ്ഗക്കാർ
10. ജയിക്കാൻ വേണ്ടി ചില അവസരങ്ങളിൽ എതിരാളിയെ അറിഞ്ഞുകൊണ്ട് ഉപദ്രവിക്കേണ്ടിയും വരാം.					
11. മത്സരശേഷവും ചില എതിരാളികളോട് എനിക്ക് ദേഷ്യം നിലനിൽക്കുന്നുണ്ട്.					
12. എതിരാളി മോശമായി പെരുമാറിയാൽ കളി കഴിയുമ്പോൾ അയാളെ ഉപദ്രവിക്കാനുള്ള അവസരം നോക്കി നടക്കുന്നുണ്ട്.					
13. നിയന്ത്രിക്കാനാകാത്ത ദേഷ്യം എനിക്ക് ചില കളിക്കാരോട് തോന്നുന്നുണ്ട്.					
14. എതിർ കളിക്കാരനെ ശത്രുവായി ഞാൻ കണക്കാക്കുന്നു.					
15. എതിരാളികളെ പ്രോത്സാഹിപ്പിക്കുന്നവരെ ഉപദ്രവിക്കാൻ തോന്നുന്നുണ്ട്.					
16. എതിരാളികളെ ഉപദ്രവിക്കാനുള്ള വേദിയായി ഞാൻ കളിക്കളത്തെ കണക്കാക്കുന്നു.					

Name :  
Age :  
Sex :  
Discipline :  
Institute :  
Place :

- നന്ദി -

**PERSONAL INFORMATION SCHEDULE (PIS)**

**Department of Psychology  
University of Calicut**

- (1) പേര് :  
(Name)
- (2) വയസ്സ് :  
(Age)
- (3) ആൺ/പെൺ :  
(Male/Female)
- (4) സ്ഥാപനം :  
(Institution)
- (5) സ്ഥലം :  
(Place)
- (6) കളിക്കുന്ന ഇനം :  
(Sport Discipline)
- (7) കളിക്കിടയിൽ എപ്പോഴെങ്കിലും : ഉണ്ട് ഇല്ല  
അപകടം ഉണ്ടായിട്ടുണ്ടോ? (Yes) (No)  
(Have you had any sport injury?)
- ഉണ്ടെങ്കിൽ എത്രപ്രാവശ്യം? :  
(If Yes, How many times?)
- (8) കളിക്കിടയിൽ മറ്റുള്ളവരുമായി : ഉണ്ട് ഇല്ല  
(എതിർകളിക്കാർ, കാണികൾ തുടങ്ങിയവർ) (Yes) (No)  
അക്രമങ്ങളിൽ ഏർപ്പെട്ടിട്ടുണ്ടോ?  
(Have you involved in sport violence?)
- ഉണ്ടെങ്കിൽ എത്രപ്രാവശ്യം? :  
(If Yes, How many times?)

