

PSYCHOLOGICAL CORRELATES OF MENTAL HEALTH OF SPORT PERSONS: AN ANALYTICAL STUDY

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CERTIFICATE

I, Dr. C. Jayan, do hereby certify that this dissertation entitled **Psychological Correlates of Mental Health of Sport Persons: An Analytical Study** is a record of bona fide study and research carried out by Rajitha Menon A. under my supervision and guidance.

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DECLARATION

I, Rajitha Menon. A, do hereby declare that this thesis **PSYCHOLOGICAL CORRELATES OF MENTAL HEALTH OF SPORT PERSONS: AN ANALYTICAL STUDY** has not been submitted for the award of a degree, diploma, title or recognition before.

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Dedication . . .

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Chapter 1

Introduction

Psychologists from all over the world are critically and enthusiastically examining psychological aspects of sport, applying research from related areas to athletic situations, and attempting to make sense out of sparse factual material. Considering the popularity of sport, its length of existence and its impact on society, relatively little research has been done with athletes. Consequently, not much is really known about aspects of psychology as they related to sport.

On the other hand, we are by no means still in the Dark Ages. Orderly laws of behaviour can be applied to the athletically gifted so as to understand and predict performance. Studies in athletic environment, with athletes, can and are occurring more frequently now than ever before.

Sport psychology as an area of study involves many individuals of diverse backgrounds with a common interest that of knowing more about athlete and sport. Newspaper accounts reflect psychology employed prior to or during competition, and radio and television sports announcers and analysts delve into the mysteries of explaining unexpected athletic performances. Coaches and athletes do likewise, as do sports fans. But the major direction of the intellectual ferment, sport psychology has led to the recognition of the science of "human behaviours" as a replacement for practices, heretofore based on common sense, popular beliefs and half-truths.

Historically, the coaching of athletes has largely emphasized the development of technical ability and physical fitness to the neglect of critical psychological factors. Although it is widely appreciated that mental and emotional states can make the difference between winning and losing, the role of psychology in sport has largely been restricted to pre-match advice and instruction. This is likely to be of little value. The demands of competition are such that the psychological preparation of sport people needs to be carried out over a prolonged period of time for it to be effective. Sports psychology is a

relatively young discipline, and sport psychologists are only beginning to provide answers to some of the many questions about sports and exercise behaviour.

A short history of sport psychology

A precise date for the beginning of sport psychology cannot be easily pinpointed. Different aspects of the field emerged at different times.

In 1898, Triplett's experiment on the motor performance of individuals acting alone and in pairs has been widely sighted as the first laboratory experiment in social psychology and represents an important bench mark for sport psychology. The experiment was promoted by Triplett's observations of competitive cyclists. Triplett, a cycling enthusiast, noted that cyclists perform faster with a pacing machine (with other cyclists in tandem) than when alone and that they performed even faster when competing against other cyclists. Triplett reasoned that the presence of others aroused a competitive drive in the cyclists that elicited better performance.

During the early 20th century, a few farsighted individuals recognized the importance of psychological factors in sport and initiated sport psychology research. Coleman Griffith was a highly respected psychologist at university of Illinois in the early 1900s and the first person to pursue sport psychology issues in the United States. In 1923 Griffith taught a course entitled "Psychology and Athletics" and in 1924 he established the athletic research laboratory at university of Illinois. Griffith wrote two text books, "Psychology of Coaching" and "Psychology of athletics. While Griffith was initiating Psychology research in the United States, sport psychology was also emerging in other countries.

In discussing the emergence of sport psychology after World War-1, Cratty (1983) specifically sighted the groundbreaking works of Schulte in Germany and Roudik in Russia. Dr.Uri Hannin, a senior researcher in sport

psychology at the research institute of physical culture in Lenin Grad, reports that sport psychology emerged as a discipline of study in the former Soviet Union during the year 1945- 1957. He suggests that Soviet sport psychology had two 'fathers', Peter Roudik and A.C.Puni. In the 1960s some individuals such as William Morgan at Wisconsin and Daniel Landers and Rainer martens at Illinois began to identify sport psychology or the social psychology of physical activity as their primary interest. Simultaneously some individuals became active sport psychologists in other countries particularly in Europe and sport psychology became an established area of sport and exercise science and practice.

In 1965, the international society of sport psychology formed and held its first international congress of sports psychology in Rome. Organizational meetings were held in 1965 and 1966, and in 1967, the North American Society for the Psychology of Sports and Physical Activity was officially incorporated.

In India, following the inclusion of 'physical education' as co-curricular subject at the secondary educational level around 1950, importance of psychological studies for sport and coaching were recognized at the training colleges for physical education teachers. Psychology for sport and sport persons became gradually well recognized by 1970 through the planned efforts of ministry of education and later ministry of sports, government of India. For the development of sport sciences in our country, Indian professionals have formed distinguished national bodies viz. Indian Association of Sport Medicine, Sports Psychology Association of India (1985), National Association of Physical Education and Sport Sciences (1992), Sport Sciences Research Foundation (1993) etc. (Sahni, 2005).

What is Sport Psychology?

Sport Psychology is defined as the primarily scientific study of the behavioural, affective and cognitive reactions to sport settings including reactions of both participants and spectators (Wann, 1997).

What sport psychology specialists do?

Contemporary sport psychologists perceive varied carriers. They serve three primary roles in professional activities, consulting, teaching, and conducting research. A brief description of these roles is as follows.

a. The teaching role

Many sport and exercise psychology specialists teach university students' courses such as exercise psychology, applied sport psychology and social psychology of sport. They may also teach courses such as personality psychology or developmental psychology if they work in a psychology department or courses such as motor learning and control or sport sociology or if they work in a sport science programme.

b. Consulting role

A second important role is consulting with individual athletes or athletic teams to develop psychological skills for enhancing competitive performance and training. Hundreds of teams and athletes use sport psychology consultants for psychological skill training.

c. The research role

The primary function of participants in any scholarly field is to advance the knowledge within the field. They do this by conducting research. They might for example, study what motivates children to be involved in youth sport, how

imagery influences proficiency in golf putting or what the relationship is between sport performance and self-efficacy. Sport psychologists then share their findings with participants and colleagues in the field. This sharing produces advances, discussions and healthy debates at professional meetings and in journals.

In any area of science, the researchers' choice of topics to investigate, the methods they employed and the perspective they take, are not freely and logically determined. Rather, they are heavily influenced by the sociological forces both within and outside the discipline. Sport psychology is no exception, because trends in sport psychology have tended to parallel those in general psychology. The research that was conducted in sport psychology during the 1950-1965 time period was characterised by empiricism, the most of the studies investigated personality. This perspective was consistent with the trait approach that was very vogue in the general area of psychology. In contrast, the time period 1966-1976 was characterised by social analysis approach. Research during this decade consisted of selecting one theory at a time from main stream psychology and testing that theory in the area of sport and motor performance. Such topics as social facilitation, achievement motivation, social reinforcement and arousal, and motor performance were investigated. Research conducted from the late 1970s to the present has also been influenced by cognitive approaches including causal attributions, intrinsic motivation and self-efficacy/self-confidence (Pachauri, 1999).

Sports and games are gaining importance in human life day by day. Participation in sporting events is related to bodily balance and psychological stability. The impact of sport and exercise on *mental health* is a longstanding issue, which became clearly identified in 1980s. Just as physical health means something more than the absence of disturbing symptoms, mental health also has a positive aspect.

Personality is the overall pattern of psychological characteristics that makes each person a unique individual. Individual differences are obvious in sport and understanding such personality factors can help to explain sport and exercise behaviour. The goal of sport personality research is to provide accurate and reliable information about individual differences in sport and implications of such personality differences for sport performance and behaviour. Historically, one of the most popular issues in sport psychology concerns relationship between personality and sport participation.

After an expedition through the 13 major theories of personality, Hall et al. (1998) authentically make the conclusion that none of the theories is completely right or wrong, each of which has different strengths and weaknesses. Researchers in the field adhere to any one of them, which suits the task at hand.

Much evidence testifies that people who are emotionally adept – who know and manage their own feelings well and who read and deal effectively with other people's feelings – at an advantage in any domain of life, whether romance and intimate relationships or picking up the unspoken rules that govern success in organisation politics (Goleman, 1995). The world of sport is not except from this fact.

Moreover, emotions are tremendously important in physical education and in the realm of sport. Emotional arousal is necessary for peak performance. Frustrations and disappointments are inevitable in competitive activities. Anxiety and stress, as well as joy and fun, are a part of athletics. Anger and fear do rear their heads as people clash in combative and body contact activities. General emotional excitement surrounds and is part of almost every sport situations. The cheering of the spectators, the music of the bands, the barking of the vendors, and the partisanship of parents and friends, all add to the aura of excitement and stimulate in most individuals' emotional response.

Emotions are involved in healthful living, in self-expression, in leadership and in the development of values (Frost, 1971). People with well developed emotional skills are also more likely to be content and effective in their lives, mastering the habits of mind that foster their own productivity, people who cannot marshal some control over their emotional life, fight inner battles that sabotage their ability for focused work and clear thought. *Emotional intelligence* is the ability to perceive accurately, appraise, and express emotions; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth (Goleman, 1995). In exploring the ingredients of superb job performance, Goleman emphasises a common core of personal and social abilities – emotional intelligence.

There are many who advocate that sportsmen are generally intellectually inferior though they might be physically super-fit. It has taken a good deal of effort and energy for the sport psychologists and physical educators to remove this misconception from the minds of the people at large. Whether participation in highly competitive sport and games and physical activity sharpens intellect, has been a controversial subject (Kamlesh, 1983).

A child who plays vigorously manifests his intelligence in many ways, a sickly child is less capable of showing intelligent behaviour. As Kamlesh (1983) cites, Getman, Kehpart, Newell etc. have univocally shown that 'movement' is the basis for *intelligence*.

Vigorous physical activity is a powerful inducement to the stabilising emotions and strengthening nerves – the apparatus of our intelligence. There is dearth of studies that throw light on the relationship and correlation between motor activity and intellectual activity of sportsmen, non-sportsmen and even handicapped population. Thinking is very much affected by the psychological

functioning of the body. Kamlesh (1983) suggests that sportsmen should not be expected to be less intelligent than an average individual. They may have lesser academic achievement because they devote more time to hard physical labour and it leaves them little time for hard study. Performing movement intelligently means using the powers of body and mind to accomplish observable tasks in a skilful manner. The more skilful the player, the better tactics and strategies he or she should be able to adopt in achieving success in his sport events. Almost all the team games require every player of the team to think intelligently and act intelligently. Rather to act at the spur of the moment and make use of the opportunity at a given moment scoring a point or making a good move during practice and competition. Whether the intelligence in sporting situation has something to do with general intelligence of an individual is yet to be decided.

1.1 Relevance of the present study

No training in the sport field is complete without reference to the psychological study and the psychological training of athletes. All other factors – biological and sociological being equal, psychological conditioning of an athlete decidedly determines his/her success or failure in competition. Moreover, there may be a plethora of psychological factors that can hinder sport performance (Rajitha, 2004).

An overview of the studies conducted in the arena of sport psychology makes the sense that majority of the studies on the primary goal of the discipline – performance enhancement. Very few studies are concerned with the athlete as a 'whole' person. An in-depth psychological analysis of an athlete considering cognitive, affective and behavioural perspectives seems to be more logical and demanding. All the above, a study inquiring how these variables are interrelated with the athletes' *mental health* would help to balance the outweighed performance oriented research tradition, to a certain extent.

The study of *personality* traits and their relationships to sport can assist the coach and the teacher in the selection of players, in the guidance of those who seek help in choosing a sport, in teaching effectively, and in understanding the behaviour of those who come under their leadership.

Sport has always been a passionate phenomenon requiring tremendous emotional investment and focussed to excel. The highly charged realm of sport is identified as an excellent place to study the phenomenon of emotion and perspective. Commenting on 'emotion and perspective in sport' Botterill and Brown, (2002) suggest that Dr. Daniel Goleman's book "*Emotional Intelligence*", sensitise us to how dramatically the topic of emotions, emotional development, emotional management, and emotional health has been neglected in a variety of fields. Clearly as a field in which emotion and perspective play – such a large part, we have major responsibility in studying the phenomena and identifying important practical implications.

Goleman describes the emotional advantage that top performers tend to share. The 'master aptitude' includes the ability to marshal feelings of enthusiasm, zeal, and confidence; persisting in the face of setbacks. Studies of Olympic athletes, world-class musicians, and chess grandmasters identify one unifying trait: the ability to motivate oneself to pursue relentless training routines. Hope, optimism and belief were also found to be predictive of success (Goleman, 1995).

Our emotions can be both facilitating and debilitating. Many people feel the need to maximise and appropriately direct the energy that emotion provides. It is important that we respect the power that our emotions can have on us, but equally important are the effects that we can have on them. Emotions are a vital part of the human experience and should neither be feared nor ignored (Botterill and Brown, 2002).

In fact, *intelligence* and motor activity is the basic ingredient of the harmonious development leading to the 'wholeness' of man. The results of most of the studies conducted on motor and intellectual aspects of athletes "are more suggestive than substantial". The studies are often based upon clinical observations rather than 'hard data' while the data that have been collected, have not always been accorded acceptable statistical treatment (Kamlesh, 1983).

The information assimilated from the research can be utilised by the coaches, clinicians and the athletes themselves to enhance mental health and maintain psychological well being.

1.2 Statement of the problem

The present study is entitled as "Psychological Correlates of Mental Health of Sport Persons: An Analytical Study"

1.3 Definition of the key terms

Operational definitions of the key terms involved in the present investigation are explained below

1.3.1 Correlate

A variable related in some way to another variable is called a correlate. In the present investigation, 'correlates' refers to the variables related to mental health of sport persons.

1.3.2 Mental health

The variable mental health has been used generally in two ways: 1. Absence of mental illness, and 2. positive mental health. In the clinical/medical set up, mentally healthy person is an individual free from mental illness. The positive mental health refers to behaviours, attitudes, the feelings that represent

an individual's level of personal effectiveness, success and satisfaction. In this sense, it has no direct connection with the mental illness (Jahoda, 1958).

Different theoreticians have suggested a multitude of criteria for defining mental health. A quick overview of related literature makes to say Jahoda (1958) as most comprehensive among them. She summarises a set of criteria in current use are given below:

1. Attitude towards the self
2. Self-actualisation
3. Integration
4. Autonomy
5. Perception of reality, and
6. Environmental mastery

The total score in the in the Mental Health Status Scale (Gireesan and Sam Sanandaraj, 1988) considered as the mental health score of an individual sport person.

1.3.3 Personality

Type-A and Type-B personality patterns represent two ends of a continuum representing the temperamental pattern of individuals. The Type-A personality pattern is found to show behavioral dispositions such as ambitiousness, aggressiveness, competitiveness, impatience, sense of time urgency, goal directedness without proper planning, and polyphasic behavior. Specific behaviors like muscle tenseness, alertness, rapid and emphatic vocal stylistics, accelerated pace of activities, and emotional responses such as irritation, hostility and increased potential for anger are also associated with Type-A personality pattern. The Type-B's in contrast to the Type-A's are more placid, patient, relaxed and better able to deal with stresses. A person with a

score of 5 or above on 'A scale of Type –A personality Pattern' (Robert et. al , 1998) is considered to be a Type –A individual. The major characteristics of Type-A individuals are as follow.

- a. An intense sense of time urgency:
- b. Inappropriate aggression hostility:
- c. Polyphasic behaviour:
- d. Goal directedness without proper planning

1.3.4 Emotional Intelligence

Emotional Intelligence refers “to the capacity for recognizing our own feelings and those of others, for motivating ourselves and for managing emotions well in ourselves and in our relationships” (Goleman ,1998). It has five domains:

1. Self-awareness
2. Self-regulation
3. Motivation
4. Empathy, and
5. Social skills

The total score of 'Emotional Intelligence Scale for Sport Persons (EISS)' is considered to be the emotional intelligence score of a sport person.

1.3.5 Intelligence

According to Spearman, all intellectual activity is dependent primarily upon, and is an expression of, a general factor to all mental activity. This factor designated by the symbol 'g' is possessed by all individuals, but in varying degrees, of course, since people differ in mental ability; and it(g) operates in all mental activity, though in varying amounts, since mental tasks differ in respect to their demands upon general intelligence. The general factor can be observed

and known only through its specific manifestations- in this instance through psychological tests. The best available measure of 'g' factor is the Progressive Matrices developed by J.C.Raven (1989). Raven's Progressive Matrices is a test of observations, capacity for clear thinking and accurate intellectual work. The total score on the Advanced Progressive Matrices (APM) gives the index of intelligence of sport person.

1.4 Objectives

The following are the objectives set for the present investigation:

1. To find out whether there exist any relationship among mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.
2. To find out whether there exist any relationship among mental health, emotional intelligence and intelligence of Type-A sport persons.
3. To find out whether there exist any relationship among mental health, emotional intelligence and intelligence of Type-B sport persons.
4. To predict mental health of sport persons by means of predictor variables, Type-A personality pattern, emotional intelligence and intelligence.
5. To find out the influence of selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.
6. To find out the difference between male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.

7. To find out the difference between open and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
8. To find out the difference between Type-A and Type-B sport persons on mental health, emotional intelligence and intelligence
9. To find out the main and interaction effects for the variables sex, Type-A personality pattern and selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health of sport persons.

1.5 Hypotheses

The following are the hypotheses set for the present investigation:

1. Significant relationships exist among mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.
2. Significant relationships exist among mental health, emotional intelligence and intelligence of Type-A sport persons.
3. Significant relationships exist among mental health, emotional intelligence and intelligence of Type-B sport persons.
4. Mental health of sport persons can be predicted by means of predictor variables, Type-A personality pattern, emotional intelligence and intelligence.
5. Significant differences exist among the groups based on sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on the variables mental health, Type-A personality pattern, emotional intelligence and intelligence

6. Significant differences exist between male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
7. Significant differences exist between open and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
8. Significant differences exist between Type-A and Type-B sport persons on mental health, emotional intelligence and intelligence.
9. Significant main and interaction effects exist for the variables sex, and Type-A personality pattern and selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health of sport persons.

1.6 Scope of the study

The results from this attempt could be widely used in the following ways:

1. To enhance the mental health of sport persons as a professional group.
2. To enhance sport performance by facilitating mental health, and emotional intelligence.
3. The information yielded from the investigation could be used for selection of sport persons.
4. To check the applicability of the emerging construct in general psychology – emotional intelligence- in the realm of sport.
5. Based on the results of the inquiry novel training modules can be developed.
6. To enhance further research in the related fields.

1.7 Limitations of the study

The present study is an attempt to understand correlates of mental health of sport persons. Any study, which has such a wide scope, may have some limitations too. Even though utmost care has been taken to make the study perfect, the investigator feels that many limitations are there, some of them are as follows:

1. The scope of the study includes all sport persons of Kerala. But the data was collected from Sports Authority of India's (SAI) sports training centres (STC) in Kerala. Future studies may be conducted in other sport institutions located in the state.
2. A comparison with non-sport persons was avoided.
3. The concept of emotional intelligence in the present investigation is based on Goldman's definitions. As an emerging construct the definition of the variable may vary in future.

1.8 Organization of the report

The study is reported under six chapters viz., 1. Introduction, 2. Review of Related Literature, 3. Method, 4. Test construction, 5. Results and Discussion, and 6. Summary, Conclusions and Suggestions.

The first chapter narrates almost all the important aspects of the study viz.,

- 1.1 Need and significance of the study
- 1.2 Statement of the problem
- 1.3 Definition of the key terms
- 1.4 Objectives of the study
- 1.5 Hypotheses
- 1.6 Scope of the study and

- 1.7 Limitations of the study, and
- 1.8 Organization of the report

In the second chapter ‘Review of the Related Literature’ are summarized as follows:

- 2.1 Mental health
- 2.2 Personality
- 2.3 Emotional intelligence, and
- 2.4 Intelligence

‘Method’, the third chapter describes the various steps followed by the investigator to conduct the research. The method devised for the same consists mainly of the following four sections.

- 3.1 Sample
- 3.2. Measures
- 3.3. Procedures, and
- 3.4. Statistical analysis

Chapter four, ‘Test Construction’, presents a detailed description of development and standardization of ‘Emotional Intelligence Scale for Sport Persons’ (EISS).

Chapter five, ‘Results and Discussion’ presents the results found out by the investigator through statistical analysis of the data collected. The different statistical designs used in the study to unravel the psychological aspects of sport persons and the results of these statistical procedures are discussed under the following sections.

- 5.1 Correlational Analysis
- 5.2 Multiple Regression Analysis

- 5.3 Multivariate Analysis of Variance (MANOVA)
- 5.4 't'- Test Analysis, and
- 5.5 Three-Way Analysis of Variance (ANOVA)

The last chapter, 'Summary, Conclusions and Suggestions' offers a short version of the work along with major findings, conclusion, and suggestions for further research.

Chapter 2

Review of related literature

A primary survey of the theoretical as well as empirical works along with the expert's opinion in the areas concerned has brought about new insights and directions for the study proposed. In this section some of the relevant literature have been plotted which were collected from books, journals and Internet as well.

The related literature presented in this section is divided into four major heads such as:

- 2.1 Mental health
- 2.2. Personality
- 2.3 Emotional intelligence, and
- 2.4 Intelligence.

2.1 Mental health

2.1.1 Historical background

Historically, two trends in psychology and psychiatry have contributed to the concept of mental health. The first attempts to understand and define mental health in a positive sense. Examples include: (1) The optimum of growth and happiness combined with the capacity to participate in the reproduction of society; (2) Emotional maturity, strength of character, capacity to deal with conflicting emotions, a balance between inner life and adaptations to reality, and a successful welding into a whole of the different parts of the personality leading to an integrated self-concept. (3) The adjustment of human beings to the world and to each other with a maximum of effectiveness and happiness. These definitions emphasize a harmonious view of mental life. They are consistent with the definition of health adopted by the World Health Organization: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity."

The second trend is more pragmatic and consonant with current psychiatric practice, which has made the control and treatment of mental disorders its primary objectives. Based on the application of the medical model to psychiatry, this approach characterizes mental health as the absence of mental disease (Troisi and McGuire, 1998). The concept of mental health adopted in the present investigation is congruent with the first trend. What is the exact relation between mental health and physical health? This question is one of the major topics of discussion. As the evidences suggest,

In the clinical/medical set up, mentally healthy person is an individual free from mental illness. The positive mental health refers to behaviours, attitudes, the feelings that represent an individual's level of personal effectiveness, success and satisfaction. In this sense, it has no direct connection with the mental illness (Jahoda, 1958).

Different theoreticians have suggested a multitude of criteria for defining mental health. An overview of related literature helps considering Johoda (1958) as most comprehensive among them. She summarises a set of criteria of positive mental health are as given below:

Attitudes toward the self

The mentally healthy attitude toward the self is described by terms such as self-acceptance, self-confidence or self-reliance. Self-acceptance implies that a person has learned to live with himself, accepting both the limitations and possibilities he may find in himself. Self-confidence, self-esteem and self-respect have a more positive slant; they express the judgement that in balance the self is 'good', capable and strong. Self-reliance carried the connotation of self-confidence and, in addition, of independence from others and of initiative from within.

Self-actualisation

This criterion is concerned with what a person does with his self over a period of time. The various authors seem to emphasise one or more of the following aspects: (1) self-concept; (2) motivational processes; and (3) the investment in living, referring to the achievements of the self-actualising person as demonstrated in a high degree of differentiation, or maximum development, of his basic equipment. The greater the amount of growth motivation, the healthier person is. Growth motivation leads beyond tension reduction to self-actualisation of potential capacities and talents, to devotion to a mission in life or a vocation, to activity rather than rest or resignation. Investment in living is the capacity to evoke an empathetic, warm or compassionate response from others. The healthy individual demonstrates concern for others and does not centre all his strivings on satisfying his own needs.

Integration

Integration refers to the relatedness of all processes and attributes in an individual. Integration as a criterion for mental health is treated with emphasis on one of the following aspects: (1) a balance of psychic forces in the individual, (2) a unifying outlook on life, emphasising cognitive aspects of integration, and (3) resistance to stress. Balance of psychic forces implies the notion of a balance among id, ego and superego, it does not aim at eliminating or denying their demands. The unifying philosophy of life results in the individuals feeling that there is purpose and meaning to his life.

Autonomy

The term autonomy denotes a relation between individual and environment with regard to decision-making. Autonomy means a conscious discrimination by the individual of environmental factors he wishes to accept or

reject. Expositions of the criteria of autonomy deal with one or both of two aspects: (1) The nature of the decision-making process, emphasising the regulation from within, in accordance with internalised standards; (2) The outcome of the decision-making process in terms of independent actions. One's behaviour should not be determined by external exigency alone, but dictated also from within, based upon that inner organisation of values, needs, belief, accomplishments and still unrealised goals, which together comprise that individual's world view.

Perception of Reality

Perception of reality is called mentally healthy when what the individual sees corresponds to what is actually there. In the mental health literature, perception of reality is discussed invariably as social perception, meaning that the conditions under which perception occurs or the object of perception, or both, involve other human beings. Two aspects of reality perception are suggested as criteria for mental health: perception free from need distortion; and empathy or social sensitivity.

Environmental Mastery

Six aspects of environmental mastery are suggested as criteria for mental health:

- (a) The ability to love
- (b) Adequacy in love, work and play
- (c) Adequacy in interpersonal relations
- (d) Efficiency in meeting situational requirements
- (e) Capacity for adaptation and adjustment
- (f) Efficiency in problem solving.

The definitions and observations on mental health status, given above, provide an adequate picture of the concept, explaining its various aspects in relation to health and illness.

2.1.2 Genetic Contributors to Mental Health

The research that has been summarised indicates that psychological adaptation and well-being may be directly promoted, or that psychological maladjustment may be avoided, by some basic characteristics of people and situations and that these characteristics may be, in part influenced by genetic factors.

Summarising research findings on the genetic contributors to mental health, Dilalla (1998) denotes that researchers have been extremely interested in studying "resilient" individuals to gain potential insight into how mental illness might be successfully prevented. The focus is on potential genetic influences on adaptation and resilience.

Such influences may be of at least five types. First, general intellectual ability has been shown to be a protective factor in terms of mental health. Second, temperamental characteristics may be related to a general resistance to stressful events. Third, personality traits may exert a direct influence on wellness and mental health. Fourth, positive mental attitude and a general sense of optimism have been linked to positive outcome. Finally, social support has been shown to play a crucial role in protecting individuals from psychological distress.

2.1.2.1 Intellectual ability

Research on twins, twins reared apart, and adoptee has implicated the influence of both genetic and environmental factors on intelligence quotient (IQ). Given the abundant research on the utility of IQ scores as predictors of

outcomes such as academic achievement and employment success, it seems clear that IQ scores tap into skills and abilities that are associated with success.

2.1.2.2 Temperament

In discussions about the roots of adaptation, temperamental characteristics are often suggested to directly contribute to psychological wellness, or indirectly promote adjustment by way of buffering the individual against the effects of stressors. Research on links between temperament and mental health has been hampered, however, by a lack of consensus among researchers regarding the definition, scope and measurement of temperament. In very general terms, temperament can be understood as a group of characteristics that reflect the basic behavioural style of an individual. There is some consensus that temperament has biological underpinnings, particularly to the extent that reliable individual differences in temperamental characteristics have been documented within the first hours after birth. Most, although not all, researchers in this area focus on infancy and early childhood, given the assumption that associations between temperamental traits and actual behaviour become more difficult to disentangle as the individual accrues life experience. There is also substantial blurring between definitions of temperament and personality, although there is some consensus that personality represents an outgrowth or development of basic temperamental traits.

Substantial research has demonstrated association between individual differences in temperamental characteristics and psychological adjustment, coping with stressful events, and resilience. In particular, temperamental attributes such as activity level, emotional stability versus reactivity, cognitive intellectual abilities the ability to reflect on one's behaviour, and the degree of which one is socially responsive to others have been shown to function as protective factors in individuals at risk for developing psychological disorders.

2.1.2.3 Personality traits

The study, conducted by Auke Tellegen and his colleagues used the Multidimensional Personality Questionnaire (MPQ) as an index of normal personality characteristics. The MPQ measures a broad range of normal personality traits, many of which are related to personal and interpersonal adaptation.

The last three personality traits in this study Positive Emotionality, Negative Emotionality, Constraint are similar in content to the broad personality traits of Extraversion, Neuroticism, and Psychoticism, respectively. Positive Emotionality is a composite of the traits of well being, Social Potency, Achievement, and Social Closeness. Hence, it is related to the broad experience of positive emotional states in an individual as well as interpersonal context. Well being in particular, is related to a sense of optimism and hope about one's future, and attribute shown to function as a protective factor when faced with stressors that could place an individual at risk for emotional distress or disorder. Similarly, social closeness and social potency relate to the desire for and success at negotiating interpersonal associations with others. These characteristics, too, have been shown to function as "buffers" for individuals who are under stress. Hence, we see a moderate degree of genetic influence on personality characteristics that may play a role in promoting or maintaining mental health, as well as moderate unique environmental influence and smaller but significant shared environment influence on these traits.

Negative Emotionality (a composite of stress reaction, alienation and aggression) has been proposed as a general risk factor for emotional distress and disorder.

2.1.2.4 Positive Mental Attitude/ Optimism

Although we might consider optimism and the expression of a positive mental attitude as a personality characteristic, it seems reasonable to discuss separately the findings in this area given the importance accorded to these constructs in the literature on stress, coping and resilience. Writers and researchers in this area have generally approached the topic from a purely ‘environmental’ perspective, arguing that our expectations about the world (Generalised to encompass a broad sense of optimism or pessimism) are essentially learned as a result of the history of our daily interchanges with people and things.

However, a recent study by Robert Plomin and colleagues, of twins reared together and apart, the first study of its kind, investigated the potential contributing of its kind, investigated the potential contributing role of genetic factors to the development of optimism and to the link between self-reported optimism and mental health outcome. In brief, roughly 25% of individual differences in self reported optimism were attributed to the effects of genetic factors.

Consistent with other research in the resilience literature Plomin's study also indicated that optimism was a significant predictor of life satisfaction and depression. In addition, however the researchers also demonstrated that the observed association between optimism and mental health could be explained, at least in part, by a shared genetic effect. That is, the same genetic factors may influence both optimism and mental health status.

2.1.2.5 Social support

The literature on stress and coping has shown conclusively that individuals who are able to draw on the emotional, physical and material support

of others are more resistant to the negative effects of stressful events. Such individuals as a result of social environmental influences are viewed as more psychologically healthy than their risk inducing environments might predict that they would be.

Some initial research consistent with this model has been reported by Robert Plomin and his colleagues in the area of adaptation to aging. In that particular study, genetic influences were shown to account for a significant portion of the observed association between psychological well being and individuals perceptions about the adequacy of their social support networks.

2.1.3 Mental health and emotions

An emotion consists of activity in the brain and nervous system that is reflected in bodily changes and in a particular subjective experience typically described as a feeling or mood. To understand the part that emotions play in coping and mental health, one must view emotions in the large context of biosocial systems. To this end, in their article on 'emotions and mental health' they (Izard et al. 1998) describe the components of an emotion, the emotions system, and personality as a set of systems that has emotions as the primary motivational system. They include an overview of the anatomy and neurophysiology of emotions. As understanding of these processes help us to appreciate how readily emotions play a direct role in physical and mental health. They conclude with emotion regulation and the role of emotions in relationships and in specific psychological disorders.

Emotions are important factors in the development of a healthy personality and social competence, and in the development of psychopathology. It has been noted that a person's skills in understanding and regulating emotions are more important to overall competence than IQ.

Because emotions are compelling motivational forces, they have a pervasive influence on perception, thought, and action. Each of the discrete emotions of human experience has unique motivational characteristics, and their motivational power is stable across the life span. For example, fear motivates protective behavior and the search for safety and security at all ages.

Studies of the effect of emotions on behavior suggest that the motivational functions of emotions are inherently adaptive. Emotions become maladaptive when they are not effectively connected to appropriate thought and action. Thus, fear helps ensure our well being whenever our security is threatened, but unrealistic fear may lead to an anxiety disorder. Sadness over the loss of a loved one can bring a family together and strengthen social bonds, but unrelieved sadness and grief can lead to depression.

As a result of evolutionary processes through thousands of generations, our genes give us emotion response predispositions that are relatively specific to each emotion. Thus, a particular emotion predisposes to think and act in a particular manner that facilitates coping with the situation, as when fear generates protective behavior in a dangerous situation. The evolutionary process that put so much adaptive information in our genes requires millions of years and proceeds at a very slow pace. By comparison, cultural evolution is rapid; it has greatly increased the number, variety, and complexity of emotion-eliciting events and situations in daily life. The number and variety of responses required to adapt to contemporary life circumstances is far greater than that provided by biological evolution. Genetic predisposition to respond to natural clues to danger has worked well in keeping us from stepping off precipices or from exploring the recesses of a strange and dark cave alone, but it does far less well in protecting us from the multitude of culturally derived dangers of contemporary urban culture. In our complex society, we are required to learn a new array of protective

behavior. Thus, the development of a healthy personality and the avoidance of mental health problems demand that we learn many new connections between a wide variety of cultural artifacts and emotions and between emotions and coping skills.

2.1.3.1 Emotions, emotions system, and personality

Some scientists think that emotions can be studied in terms of broad dimensions, such as pleasantness and arousal. In this view, it is important to know the valence (positivity, negativity) and intensity of an emotional state. Others take a discrete emotions approach in which it is important to distinguish specific emotions, such as interest, joy, sadness, anger and fear. This type of theory is based on the premise that each emotion has unique motivational functions and hence differential effects on thought and behaviour. Emotions often occur in clusters or patterns, which makes it difficult to distinguish single-emotions effects. In some cases, it is possible to identify distinct clusters or patterns of negative emotions that relate differentially to depression and anxiety.

Components of an Emotion

Each emotion has three components, neural, expressive, and experiential. The neural and experiential components are essential in defining an emotion state. The role of expressive behavior in defining emotion is more complex because it is observable, socially communicative, and, even in early development, it begins to yield to voluntary control.

Neural Component

This component is defined in terms of the brain structures and neurotransmitters that function is emotion activation, emotion expression, and emotion experience. Neuroscience has provided considerable information on the

substates of the first two components but much less on the experiential component. The first function of the neural component is to evaluate the ongoing stream of information from our sense organs and to activate a change in emotion state when the situation requires it. In many circumstances, incoming sensory information demands no new emotion, and the neural substrates can continue their work of sustaining the emotion state already present in consciousness. In a person of positive mental health, the on going state is typically the emotion of interest, the emotion that motivates most of our constructive and creative endeavors, including play, the learning of abstract knowledge, and the acquisition of the skills that lead to mental and social competence.

In some cases, the information we obtain through out sense from internal and external events requires the activation of a new emotion. When we perceive danger and the incoming information elicits fear. Neuroscientists have not yet explained the brain activities involved in the activation of other emotions. At present, we can only speculate that processes similar to those in fear occur when a situation calls for joy, sadness, anger, or some other emotion.

Three things are important in evaluating the role of the neural component of emotion in mental health; however, these things are not altogether independent of other systems. First, misperceptions and misinterpretations can fool the brain and cause it to generate as inappropriate or unnecessary emotion. Misperceiving a garden lizard as a poisonous snake or an innocuous remark as threatening will activate needless fear. Second, because the brain has separate pathways for spontaneous (involuntary) and intentional (voluntary) facial expressions of emotions, a person can intentionally deceive the observer. All that is required for deception is to learn to exert voluntary controlled simile may be inconsequential in a social greeting, but deleterious as a sign of innocence after antisocial

behavior. Third, genetic defects or injuries in certain brain structures can create dysfunction in the emotions system, and this can lead to serious deficits in social competence and to mental health problems.

Expressive Component

The face, body, and voice provide observable signals of emotion states. A facial expression of an emotion consists of a configuration of movements or any one of the several components of this configuration. Vocal expression of a given emotion changes several acoustic characteristics of the vocalization, and these are heard as changes in intonation or tone of voice. Bodily expressions produce changes in posture and gesture.

Of these three types of expressive behavior, facial expression has attracted the most research. Scientific interest in the face owes much to Charles Darwin. He made careful observations of facial expression, inquired about them in many different cultures, and declared that facial expressions of the emotions were innate and universal. Although this view was questioned on the basis of psychological experiments and debated by proponents of the evolutionary and social-constructivist views, most behavioral scientists agree that Darwin made a valid conclusion that the facial signals of several of the emotions are products of evolutionary-biological processes.

Some scientists believe that expressive behavior consists not only of externally visible movement, but of internal activity as well. The most studied internal activities are those governed by the autonomic nervous system, such as heart rate, blood pressure, respiration, and the electro dermal response. Some evidence suggests that people differ in the extent to which they externalize or internalize emotion-related behavior. Externalizing is associated with extroversion and sociability, internalizing with introversion. In deviant

development, externalizing is associated with antisocial and aggressive behavior, internalizing with depression and withdrawal.

Appropriate emotion expressions are critical to social communication and mental health from infancy throughout the life span. Either under controlled or over controlled emotion expression can be associated with the development of behavior problems and psychopathology. The mental health consequences of expression under control or over control vary across the different discrete emotions. For example, under controlled and frequent expressions of anger may be associated with aggressive conduct disorder, whereas frequent under controlled expression of sadness may be associated with depression.

Emotion feelings: Experiential component

Spontaneous or involuntary emotion expression is associated with underlying changes in particular brain structures and pathways that result in a change in the quality of consciousness. The new state of consciousness can be described as feeling, action readiness, and motivational condition. As already noted, this does not mean that a specific emotion expression and the corresponding specific emotion feeling are locked together. Biological maturation and social learning make for congruent and incongruent expression feeling combinations. Voluntarily controlled, intentional emotion expressions are used for deception, manipulation, and symbolic communication.

Nevertheless, people's mental health and well-being demand that they maintain a reasonable degree of regularity in emotion expression-feeling congruence. Such congruence is the basis of trust and respect, crucial elements in the development and maintenance of social relationships. Each person in a relationship must feel confident in the assumption of a veridical association between a specific expression and corresponding feeling. If a person continually

invalidates this assumption through deceptive and manipulative emotion expression, she destroys her relationships and jeopardizes her mental health. Because we make the assumption that spontaneous expressions are associated with corresponding emotion feelings.

Emotions system

The concept of the emotions operating as a system provides insight into the roots of human behavior. A biological or biosocial system is set of interrelated and interacting elements, and its level of complexity ranges from that of protein molecules, the building blocks of organisms, to human personality and social relationships.

Each discrete emotion functions as a system in that the three components are normally interdependent, interrelated, and interactive. The neural component functions as the proximal cause of emotion expression and emotion feeling. However, both of these latter components can influence the brain activity in emotion through feedback loops. Since Darwin, we have known that suppressing expression can dampen feeling, and we now know that this process is mediated by particular brain mechanisms.

In similar fashion, discrete emotions exert influence on each other. Sustained interest fosters children's play and the achievements and goal attainments that bring joy throughout life. Either acute shame or prolonged sadness sometimes leads to anger, and in some cases, the sadness-anger pattern becomes a symptom of depression and the shame-anger pattern produces aggression. The activation of anger decreases or eliminates fear. Dynamic relations between emotions account for important aspects of behavior and personality, including facilitation of emotion regulation.

Personality System

All of our biological and biosocial systems participate in the formation of the self-system and the super system termed personality. The emotions system and the cognitive system manifest themselves most prominently. The forming of connections and relations between emotion feelings and thoughts constitutes a major part of personality development. These feelings-thought of affective-cognitive structures reveal themselves as attachments, values, and goals. Through biological and social development, they also become organized as traits of personality. A number of studies have showed robust relationships between specific patterns of emotions and particular traits or broad dimensions of personality on the one hand and personality disorders on the other. For example, social interest and joy are part of extroversion, and the apparent absence of shame and guilt is a characteristic of antisocial personality disorders.

2.1.3.2 Neurophysiology of Emotions

Colloquial expressions are often used to describe emotional experiences. When one is angry, one's "blood boils"; when one is disgusted, one may be "sick" to one's stomach; or when one is sad, one may develop a "lump" in one's throat. These metaphors all describe bodily activities that are concomitant with emotional experience. Research into the neurological, hormonal, and autonomic nervous system processes involved in emotional experience has given us a greater understanding of these bodily changes and their implications for mental health.

Neural Networks in the Brain

The left and right hemispheres of the brain are involved differently in emotional processes. The right is more involved with the negative emotions such as fear and disgust, and the left is more involved with the positive emotions of

interest and joy. Measurement of electrical activity within the left and right prefrontal and anterior temporal regions of the brain provides an indicator of both a person's emotional responsiveness to aversive situations and prevailing mood. People who have greater resting state activation in the right hemisphere than in the left hemisphere report (a) greater negative affect in response to watching fear-provoking and disgusting film segments, and (b) increased negative mood in general. This pattern of activation appears to be stable regardless of current emotional experience. People who had been previously depressed but who did not exhibit symptoms of depression for at least a year still showed greater right-hemisphere than left-hemisphere activation

In addition to the left-right hemisphere distinction in positive and negative emotions, researchers agree that at least a few emotion-specific neural pathways exist within the brain. Most of the studies of neural circuits have been limited to experimental work with animals. Recent developments in brain imaging techniques make it possible to examine complex neural networks within the living human being and should usher in a period of discovery concerning emotions and the brain.

The one neural pathway that has been mapped well, at least within the rat's brain, is that for fear. The findings from the animals' research on the neural pathways in the learning of a fear response are suggestive for understanding the fear process in humans. The results of this research are consistent with findings from work with brain-injured patients.

The fear response has two components (a) conditioned neural networks that when confronted by particular stimuli activate innate responses, and (b) an innate response syndrome that entails mobilization of bodily resources. Processing of a sensory stimulus, such as loud noise, first transmits information to the thalamus. From there, the neural message is transmitted to the amygdala

(in the temporal lobe) along the two pathways: an indirect path through the cerebral cortex, or a direct path through the thalamoamygdala pathway. Neural messages traveling to the cortex are made more comprehensible thereby more extensive information processing and evaluation. Neural projections from the cortex then carry this information to the lateral nucleus of the amygdala. The direct route from the thalamus to the amygdala does not require cortical processing of the neural message and is faster. It is rapid, automatic, and unconscious. Simple conditioning can be mediated along this pathway. Such conditioning is based on rudimentary assessment of the emotional significance of a stimulus by the amygdala. As with the thalamo-corticoamygdala pathway, the direct thalamo-amygdala pathway involves the lateral nucleus of the amygdala.

The fact that the thalamo-amygdala pathway does not require cortical processing suggests that at times people may feel a response to threat without understanding the origins of their fear. Research with animals has shown that it is difficult to extinguish a conditioned fear response that was acquired through sub cortical pathways without neocortical involvement. This suggests that some phobias that are difficult to extinguish may be based on inadequate cortical processing of the stimulus and its context.

Whereas the lateral nucleus is the input center of the amygdala, the central nucleus is responsible for output. If a stimulus is deemed emotionally significant, messages from the central nucleus are sent to trigger bodily responses. Neural pathways from the central nucleus to the basal nucleus within the hypothalamus control neuroendocrine responses (e.g., increased adrenaline output) that are involved in the body's response to stress. Neural pathway from the central nucleus to the lateral hypothalamus stimulate sympathetic autonomic nervous system pathways from the central nucleus to the central gray activate freezing and other defensive behavior for coping with danger.

Neuroendocrine Response

Researchers agree that mechanisms specific to particular emotions have been and will continue to be found in the neural networks of the brain, the bodily responses of hormone release and autonomic nervous system (ANS) reactivity do not seem as clearly linked to specific emotions. For example, the hypothalamic pituitary-adrenal (HPA) axis, which produces corticotrophin-releasing hormone, functions in both fear/anxiety and sad/depressive reactions. Abnormal regulation of this axis is a trademark of affective disorders pertaining to both anxiety and depression. The more general activation of neuroendocrine (i.e., hormonal) and ANS systems reflects the fact that a major function of emotional arousal is to prepare the body to respond to challenging or threatening stimuli. This state of preparedness includes similar physiological responses across different emotions.

Hormones associated specifically, with negative emotions, and especially with emotional dysregulation, are corticotrophin-releasing hormone (CRH) and adrenocorticotrophic hormone (ACTH), both of which are involved in the production of another hormone, cortisol. A stimulus assessed as threatening can stimulate increased activity of the HPA axis and, in particular, can cause an increase in the production of CRH in the central amygdala and in the hypothalamus. The CRH produced in the amygdala increases sympathetic nervous system activity of the ANS, elevating intentional capacities and behavioural arousal. The CRH produced in the hypothalamus, along with other hormones, activates the production of ACTH in the anterior pituitary gland. Once circulated, ACTH then activates cells in the adrenal cortex to generate cortisol. Cortisol affects bodily functioning in multiple ways, such as elevating glucose (blood sugar) levels in circulation, increasing blood volume, and by interacting with the immune system. Prolonged stress and elevated cortisol level increases

susceptibility to high blood pressure and autoimmune disease. In turn, these medical problems increase the risk of emotional deregulation.

The release of cortisol, as measured in assays of saliva, is a reliable index of stress. For example, the greater the amount of time 18-month-old infants take to quiet after being inoculated, the higher the levels of cortisol found in their saliva. Prolonged stress has multiple effects on HPA axis functioning. CRH production in the hypothalamus becomes less sensitive to para ventricular infusions and ACTH production in the pituitary becomes less sensitive to CRH infusions, but cortisol production the adrenal cortex becomes more responsive to AC TH. This last effect is normally counterbalanced by a negative feedback system that inhibits the production of ACTH when increased levels of cortisol appear, allowing the gradual return of normal HPA axis activity. This negative feedback loop is suppressed in 40 to 70% of people hospitalized with depression, allowing for the hyper secretion of cortisol, and their adrenal glands tend to be abnormally large as well. After successful therapy for depression, however, HPA axis activity return to normal, suggesting that the dysregulation of HPA activity within clinical populations is not a stable or innate trait.

ANS activity

The ANS activity in emotion-eliciting situation provides support for behavioral responses. The ANS consists of the sympathetic nervous system, which is responsible for exciting most-but not all-visceral organs (i.e., the heart muscle), and the parasympathetic nervous system, which is responsible for inhibiting most-but, again, not all-visceral organs. Most research on emotion-specific physiology has involved the peripheral ANS, but as mentioned previously, this research has produced limited results. A few studies have shown distinct patterns of activity in the sympathetic nervous system for some negative emotions but none for positive emotions. The positive emotions of joy and

interest are not concomitant with readiness for physical action in the same way as negative emotion and, therefore, one might not expect as much differentiated ANS activity. Furthermore, negative emotions often involve similar types of behavioral readiness. For example, increased heart rate is found in both anger and fear because both emotional states require increased blood in the skeleteomuscular system (e.g. the arm and leg muscles) and increased circulation of certain hormones (e.g., adrenaline).

Nevertheless, a few studies have found that under certain conditions some negative emotions can be differentiated by a complex pattern of several ANS responses. For example, whereas anger, fear, and sadness all entail heart rate acceleration, reflecting increased circulation of blood and oxygen to organs, disgust involves either no heart rate change or possibly even deceleration. Disgust often entails an orienting response, searching the environment for the aversive stimulus, and orienting is known to cause a heart rate deceleration. Compared with fear, anger creates greater diastolic blood pressure, less vasoconstriction, and greater blood flow to the periphery (e.g., the fingers) than fear. The phenomenon of 'blood boiling' during anger is a result of this increased blood flow to the periphery, which subsequently increases the temperature of the peripheral region.

Differences relating to emotional responsiveness in general are related to differences in a person's parasympathetic nervous system activity. Stimulation of the vagus nerve decelerates heart rate (a parasympathetic function). Vagal tone is a measure of rhythmic fluctuations in heart rate related to respiration. Infants with higher vagal tone (i.e., greater heart rate variability) are more likely to be emotionally expressive and to sustain interest in stimuli. Further more, by 5 months of age, infants with higher vagal tone are more likely to respond to distress by regulating their emotions through processes such as looking at their

mothers, at themselves in a mirror, or simply by vocalizing. Compared with infants of normal mothers, infants of depressed mothers show lower vagal tone (and thus higher heart rate) and increased cortisol levels as early as 3 months of age. Vagal tone amplitude is stable in the early years of life. The data suggest that because of dysfunction in the parasympathetic regulation of their heart rate, infants of depressed mothers may be at risk for symptoms related to sustained autonomic arousal.

2.1.3.3 Emotions and interpersonal functioning

Human beings are social by nature, and a large part of our sociability relies on the expression and communication of emotions. Emotion regulation and the management of emotion expressions are critical to establishing satisfying and rewarding relationships and to good mental health. Emotion expressions give meaning and significance to social communication, and the quality of any relationship depends on the frequency and quality of expressed emotions. Emotion expressions especially influence the development and quality of child's first relationship, that is, the attachment to the mother or primary caregiver. Children who have an easy temperament and readily express positive emotions elicit positive emotions from the caregiver. The mother's sensitivity and responsiveness to the child's emotion expression and repeated and mutually satisfying reciprocal expression of positive emotions foster the development of a secure attachment. The latter becomes a secure base from which the child can explore the social and physical environment. Easy temperament, positive emotionality, and a secure attachment to the primary caregiver serve as protective factors or buffers against the development of mental health problems.

In the context of any social relationship, expression of emotions can be contagious and cause another person to respond with a similar emotion. The reciprocal activation of positive emotions strengthens a relationship and increases

the satisfaction derived from that relationship. The reciprocal activation of negative emotions has opposite effects. For example, the frequency of expression of negative emotions helps predict marital satisfaction and the quality of family life. Similarly, the frequent expression of negative emotions has particularly deleterious effects when occurring within a family with members who have been diagnosed as mentally and physically ill.

Emotion regulation

Emotion regulation is a broad term for the mechanisms and processes that enable people to keep their emotions from running out of control. Emotion regulation is realized in three ways through the development of (a) traits of temperament and personality, (b) specific cognitive and behavioral skills for managing emotions in challenging and stressful situations, and (c) a network of caring family members and friends who provide emotional support by sharing emotional experiences. The first of the three is relatively more influenced by genes and biological predispositions. A person with a 'built in' easy temperament and positive emotionality has a head start in any situation that requires emotion regulation.

Regulation of negative emotions is important for the development of social competence and for the avoidance of behavior problems in children and adolescents. Uncontrolled expression of negative emotions is linked to a variety of clinical problems, including delinquency and drug abuse. Tempter tantrums in the toddler are a good predictor of behavior problems in later childhood and adolescents.

Emotion regulation can also be viewed in terms of its adaptive function, helping an individual to cope with self-doubt to stressful life events. When caught in a cycle of chronic expression of negative emotions, people become less

able to solve problems and are more likely to jeopardize their relationships with others. With appropriate emotion regulation, attention may be focused on possible solutions to problems rather than on the experience of negative emotion expressions.

At different points on development, the goals of emotion regulation are somewhat different. The following sections describe some of these differences within early development.

Emotional development in infancy

Infants have different emotional dispositions. Some people are highly reactive to stimuli others are not as reactive. In a person's emotional development, one of the first goals is control over emotional reactivity or arousal. Three common behaviors infants use to regulate affective arousal, especially in response to aversive events, are (a) orienting toward their caretakers, (b) shifting their attention away from the stimulus, and (c) engaging in self-stimulation. Concerning the first behavior, when confronted with a novel stimulus, such as when a stranger enters a room, infants are likely to orient towards their mothers. By looking at their mother's facial expressions by listening to their mother's vocal tones, they obtain information that enables an appropriate emotional response to new stimulus. Similarly, once able to crawl, an infant's arousal is often attenuated by the infant distancing himself from the stimulus and seeking proximity to his caregiver. Second, when presented with an aversive stimulus, an infant's heart rate increases initially, but then decrease if and when the infant averts his or her gaze from the stimulus. Not surprisingly, an attenuated ability to avert attention from the stimulus in infancy relates to an increased susceptibility to experience negative emotions. This relationship between attentional ability and negative emotional experience hold true in adulthood as well. Finally, self-stimulation, such as sucking or rhythmic behaviors such as

rocking or hand claspings, regulates emotional arousal. Sucking on pacifier, for example, reduces both an infant's motoric and physiological arousal.

Although almost all infants use these three emotion regulation techniques, depending on the infant's disposition towards regulating his or her emotional reactivity, they are used to differing degrees. Some infants who are highly reactive to a novel stimulus (e.g., a stranger) are classified as inhibited (shy, fearful, and others who are less reactive are classified as uninhibited. Those who are classified as inhibited are more likely to engage in the previously described emotion regulation procedures of proximity seeking to their caretakers, self-stimulation and long periods of gaze aversion from aversive stimuli. Those who are classified as uninhibited are more likely to sustain attention to stimuli, especially if it is aversive, and are more likely to approach a novel stimulus. Inhibited infants also show more negative emotional expression in response to novel stimuli, and uninhibited infants show more positive emotional expressions. From the earliest months of life these dispositions can be distinguished by the electrical activity in infants' right brain hemisphere relative to their left, their cortisol output, and the variability in their heart rate (e.g., vagal tone).

Emotional development in childhood

The inhibited and uninhibited patterns of response are important for understanding early mental health. Depending on the infant and young child's ability to regulate their emotional arousal. These early dispositional differences may lead to different childhood behavior problems. The inhibited preschooler, who can regulate her emotional arousal well, especially by self-soothing, may be more reticent within social groups than other children but still be able to engage in constructive and exploratory behaviors and not exhibit socioemotional difficulties. The inhibited child who is not good at emotion regulation, however, is more likely to show anxiety within a social group and may even have difficulty

engaging constructive individual play activities. These inhibited young children are latter more likely to show signs of anxiety and depression. Uninhibited infants also can develop behavior problems in early childhood. Uninhibited young children who are poor at emotion regulation are more likely than other to show impulsiveness and aggression toward playmates.

Stressful environment and emotional development

Infants and children raised in stressful environments show deviations from more typical emotional development. Research has focused on two types of stressful situations in particular: infants and young children with depressed caretakers, and maltreated children. Concerning the first of these, early in life, infants depend on their caretaker to help with their regulation of emotion, for example, by eliminating stimuli such as loud noises that are stressful to the infant. Infant emotional expression (e.g., crying) are the primary means by which the infant communicates these needs to the caretaker. When an infant's emotion expression continually fails to be met by reparative actions by the caretaker, the infant's emotional assertions change. Because depressed caretakers are in general less interactive with the infants, these infants are at risk for maladaptive emotional functioning. This altered functioning includes a lack of interest in communicating with adults, a limited range of emotional experience, and irritability.

Second, children raised in homes with recurring conflict between parents become more sensitive to cues related to impending conflict and show increased negative reactions. This phenomenon is found especially among physically abused children. In response to inter adult anger, physically abused children show greater fear, heightened arousal and aggression, and are more likely to focus on the distressful stimuli. This hyper vigilance in attention can be protective, as children are more able to anticipate situations that are beneficial to

avoid, but it also leads to an overreaction to other, non-threatening, stimuli. For example, maltreated children are often found to respond with anger and aggression to signs of distress from peers. This hypersensitivity to mildly negative emotions seems to be an integral link between parental maltreatment and the peer rejection experienced by seem "cold" to peers because they react negatively to somewhat ambiguous situations. Compounding this hypersensitivity, maltreated children are also less able to identify correctly others' emotion expressions, are less verbal about their own emotions, and are more likely to attribute hostile intentions to other children's behavior and statements.

2.1.3.4 Emotion and Psychopathology

As the primary motivating forces for cognition and action, emotions figure prominently in normal and abnormal behavior. In one sense, the real source of mental health problems is not the emotions but the poor or missing connections between emotions, thoughts, and deeds. Anger can become strongly linked to interpersonal violence, but typically this is not the case. A little anger can facilitate appropriate self-assertiveness without leading to any form of aggression. A similar argument can be made for an adaptive function on each of the basic emotions. Extreme emotional states can become maladaptive, and such states can be caused by extremely stressful conditions or a brain malfunction from a genetic defect or injury. On the other hand, under a wide range of condition, emotions motivate and organize adaptive thought and action and are forces for positive mental health.

In any case, in normal and abnormal behavior, emotion, cognition and action affect each other in a reciprocal fashion. In disorders where thought and perceptions are dysfunctional, the appropriate emotion information processing and emotion expression are also disordered, causing a breakdown in social communication. In disorders characterized by extreme emotion feeling states,

processes that are normally adaptive become disordered, causing behavioral dysfunction.

Lack of emotion feelings and inappropriate emotion expression has been implicated in several types of psychopathology. These problems relate to dysfunction in the ability to evaluate the emotional significance of events (emotion information processing ability), an inability to modulate emotion expressions in accord with social norms, an abnormal need for stimulation, and an excessively high or low threshold for the activation of emotion feelings. Emotions play a role in a variety of disorders, including schizophrenia, personality disorders, and alexithymia, and those designated as affective disorders (e.g., depression, manic-depressive disorder)

2.1.3.5 Emotion and Psychotherapy

Because emotions are essential for adaptive cognition and behavior, they also play a significant role in psychotherapy. Individual psychotherapists' conceptualizations of emotion will influence the choice of which specific aspect of a client's current functioning and past life he or she will focus on during the therapy session. Theories of emotion suggest that emotion results from interactions between several systems, including cognitive, behavioral, perceptual, and neuropsychological, but many therapists choose to focus on only one of these aspect in their treatment of disorders.

Rational-emotive therapy and emotion

Rational-emotive therapy deals with the interrelationship of emotion and thought. Consistent with cognitive theories of emotion activation, the founder of rational-emotive therapy, Albert Ellis, proposes that emotions result from an individual's dialogue, even irrational phrases and sentences about the self that are frequently repeated can become beliefs that elicit negative emotions. For

example, a person who repeatedly questions her or his own abilities comes to believe those internal musings and becomes insecure and doubting of those abilities when there is no real basis for doubt. Ellis believes disorder stems from a set of common incorrect beliefs that inevitably lead to disappointment and failure and the accompanying negative emotions. An irrational belief system might lead a person to think that she needs to be loved and approved of by everyone in her community and that she needs to be competent and capable in every aspect of life. It may include the beliefs that unhappiness is a result of external and uncontrollable forces, past events are determinants of present functioning without the possibility of change, a perfect solution of life's problem exists, and that not finding this solution is catastrophic. The aim of therapy is to identify and extinguish the irrational and illogical beliefs.

Cognitive therapy and emotion

Another cognitive model, mainly attributed to Aaron, T. Beck, postulates that maladaptive schemes as (cognitive structures) result in negative emotional and behavioral responses. These schemas cause a person to make consistently negative conclusions about themselves, the world, and the future. Thus an emotional disturbance is maintained and fueled by these negative attributions. Therapy tries to identify and extinguish these distorted cognitions through cognitive and behavioral exercises designed to reduce negative symptoms.

Client-centered therapy and emotion

Carl Roger's client-centered therapy stands in sharp contrast to cognitive behavioral therapies. Rogerian therapy relies heavily on the technique of reflecting the client's feelings. The therapist attempts to empathize with the client. Empathy enables the therapist to reflect the client's true feelings. In addition, the therapist uses verbal and nonverbal expressions of emotion as the

primary tool for showing the client unconditional positive regard, an essential element in client-centered therapy. The theory postulates that if the client feels unconditionally accepted within the therapeutic relationship, emotions, feelings, and events will be more comfortably and willingly examined and understood.

2.1.3.6 Emotion and Prevention

The evidence for the primary role of emotions in mental health and social competence points to the need for interventions to prevent emotion-related disorders and the consequences, which may occur from unhealthy experiences and expression of emotions. Programs have targeted at-risk children to help them develop appropriate emotion regulatory skills that may lessen the manifestations of problems behavior. As noted earlier, interventions have also been directed at families or patients with schizophrenia or bipolar disorder. Other types of interventions help people recover from and control the stress-related aspects of cardiac disease and to recover from being victims of crime.

Intervention and parenting

Dysfunctional parenting often involves expression of inappropriate levels of emotion (either too high and abusive, or too low and neglectful). As a result, children show behavioral problems and may perform poorly in school. Prevention can be effectively directed to the parents to help them understand their roles in teaching their children the skills for appropriately expression and regulating emotions, especially negative emotions.

Intervention and expressed emotion

Intervention programs aimed at families of schizophrenic patients significantly help to reduce relapse of symptoms when the patients return home. Returning home to a dysfunctional family environment, in which negative

emotions and criticisms are expressed at a high level, serves as a risk factor for relapse and reemergence of the symptoms associated with schizophrenia. Similarly, key relatives of bipolar patients have an effect on relapse and rehospitalization, depending on the relatives' level of expressed negative emotions. An intervention program that reduces the relatives' expressed negative emotions reduces the relapse rate in the patients.

Intervention and cardiovascular disease

Other areas of research have show a relationship between emotion and cardiovascular disease in which people who experience more stress, anxiety, and hostility are more prone to heart disease. Preventive programs try to help individuals change their life styles to reduce their levels of stress-related emotions, particularly hostility. Conclusions suggest that maintaining mental health through emotion regulation and healthy levels of expression may prevent cardiovascular disease.

Intervention and coping with crime

A Dutch intervention program highlights the role that appropriate emotion expression can play in enabling a crime victim to cope with burglary. Police officers were trained to administer an interview that was aimed at facilitating emotion and problem focused coping. Victims felt greater positive regard for the police, a greater sense of being protected and less concern about the crime.

Because emotions are so central to out functioning as human beings, there are many ways that improving the experience of emotions, enhancing the ability to regulate emotions, or changing the level of emotions expressed in the family can improve a person's psychosocial functioning. Mental health professional can help teach the skills of emotion regulation and problem solving to improve mental health and social competence.

2.1.4 Intelligence and mental health

Saklofske (1998) gives a clear idea about the relation between intelligence and mental health. He says that a general framework for relating intelligence to mental health is provided by cognitive models of well-being and maladjustment. Broadly, well-being tends to reflect people's cognition about themselves and the social and physical worlds they inhabit. For example, depressed individuals tend to have low self-esteem, to retrieve predominantly negative memories of past events, and to commit errors in reasoning that exaggerate the negative side of life. Within this cognitive framework, there is scope for reciprocal relationship between intelligence and mental health. On the one hand, cognitions of the self may influence the development of intelligence and the behavioral expression of intelligence.

2.1.4.1 Intelligence, Personality and Adjustment

It is commonly held that healthy human functioning is characterized, among other things, by a sense of self-efficacy and perceived control over the environment, positive self-regard motivation to succeed in achieving salient personal goals, and adequate coping resources and strategies. In the following sections, we review evidence bearing on the relationship between intelligence and selected markers of positive mental health and functioning. The variables we examine are in part personality factors in that they are associated with stable individual differences and in part reflect situations factors. For example, individuals differ in their general levels of optimism, but any given individual will experience varying degrees of optimism or pessimism as they encounter differing situations.

Intelligence and self-agency

According to current social-cognitive theory, human action is governed not so much by the objective properties of the environment but rather by the perceived level of personal efficacy to effect changes by productive use of capabilities and sustained effort. Among the mechanisms of personal action control, or self-agency, none may be more central or pervasive than people's sense of self-efficacy. The term self-efficacy refers to the belief that one is able to master challenging demands by means of adaptive action. Self-efficacy can be conceptualized as a 'can-do' cognition, which mirror a sense of control over the environment, or as an optimistic view of one's capability to deal with stress and anxiety.

Both self-efficacy and positive outcome expectancies have been conceptualized as key precursor of mental health and low anxiety. Whereas efficacy expectancy is the conviction that one can execute behavior required to produce an outcome, outcome expectancy refers to a person's estimate that a given behavior will lead to certain outcomes. As a level of self-efficacy decreases, anxious arousal is expected to increase. Changes in anxiety level indicate there are changes in the way the person is appraising his or her relationship with the environment. Accordingly, as efficacy expectancies decrease and resources are judged to be less adequate for satisfying task demands, the relationship is appraised as holding the potential for less control and therefore it is perceived to be more threatening. Conversely, high efficacy is expected to reduce anticipatory distress, enhance coping with threat, and elevate performance when the person is confronted by a stressful task such as a major exam. Accordingly, it is only when persons cannot predict or exercise control over demanding situations that they have reason to fear them.

Thus, people with a firm belief in their self-efficacy figure out ways of exercising some measure of control in environments containing limited opportunities, whereas those who believe themselves to be inefficacious are unlikely to affect major potential opportunities. When setbacks occur, self-efficacious individuals recover more quickly and maintain a commitment to their goals. Personal goal setting is influenced, among other things, by self-appraisal of capabilities, including intelligence. The stronger the perceived self-efficacy, the higher the goal challenges people set for themselves and the firmer is their commitment to them.

Research from a social-cognitive perspective points to a meaningful relationship between self-efficacy and academic attainment and ability. Students who regard intellectual ability as a skill that can be acquired by gaining knowledge and competencies tend to adopt functional learning goals. The students seek challenges that provide opportunities to expand their knowledge and competencies. They regard errors as a natural part of the acquisition process, rather than as a source of distress. Thus, students who view ability as reflecting acquirable skills foster a resilient sense of self-efficacy. Furthermore, healthy human functioning also appears to be affected by the beliefs people hold about how ability changes over time. Those who regard ability as a skill to be developed and practiced achieve higher attainments compared with those who regard intelligence or ability as a biological capacity that shrinks with age.

Perceived Control and Causal Attributions

Situational control appraisal is the extent to which the person believes he or she can shape or influence particular person-environment relationships. Perceived threat in a given situations may be conceptualized as a relational property between perceptions of the dangerous or threatening aspects of the environment, on the one hand, and perceived coping capabilities on the other.

Thus, people, who believe they can exercise control over immediate or potential threats do not engage in anxious and apprehensive thinking about these threats and are not perturbed by them. Situational appraisals of control are products of individual evaluations both of the demands of the situation and of personal ability to implement coping strategies. Those who believe they cannot manage threat experience high levels of anxiety arousal. These individuals dwell on their coping deficiencies and view many aspects of the environment as fraught with danger. They rehearse ways in which they may cope with feared situations, but uncertainty concerning coping capabilities fuels further anxiety. Behaviorally, perceptions of lack of control may lead to avoidance of threatening situations, which prevents the person from learning skills to deal with those very situations. Social phobics may be generally intelligent, but they lack the practical intelligence needed to handle social encounters because of their avoidance coping.

Perceived control may reflect, in part, people's need to seek a sense of control over their environment, often referred to as a motivation for "effectance". To achieve this environmental control, individuals spend considerable time and effort assessing environmental contingencies and contextual changes as well as analyzing their own powers to cope and excel in relevant contexts. Attribution theory posits that an essential motivation is to gain a measure of predictability and control over events, with emphasis on gaining an accurate appraisal of one's own personal characteristics.

Locus of causality is an attributional dimension often claimed to be related to cognitive ability, which refers to beliefs about the origins of behavior and the assignment of credit and blame for the results of one's behavior. Individuals with an internal locus of causality assume that their own behaviors and actions are responsible for the consequences that happen to them, whereas externally

controlled people believe that the locus of causality, especially for positive events, has commonly been associated with positive mental health and more adaptive functioning. Conversely, those who feel at the mercy of their environment and who feel they have little control over what happens to them may have low adaptive capacity.

Intelligence may affect the appraisal process by allowing more complex reasoning and consideration of alternatives and choices among options, thus affording greater control during both primary and secondary appraisal. People who believe they can control their own lives will put forth the effort to gain competencies and skills, thus enhancing their acquired or "crystallized" intelligence and abilities. Consistent with these hypotheses, intelligence has been reported to be moderately and inversely correlated with external locus of causality in junior and high school students. Also, some studies have specifically related deficits in mean IQ shown by black examinees to the phenomena of low controllability (learned helplessness), in which the motivation to cope with environmental contingencies is drastically diminished by preliminary exposure to uncontrollable aversive stimuli. Thus, people who have been successful at using their abilities come to believe that their abilities can control their destiny, so that locus of causality may shape the development of intelligence. However, it is not known for sure what the causal direction is: Do attributions affect cognitive test performances or do less intelligent people tend to rely more on luck and accidental or external factors than on their own abilities?

Self-Concept

People's self-image (how people come to see themselves) and their self-esteem (to what degree they feel positive about themselves) are crucial in determining their perceptions of the world, their goals and attitudes the behaviors they initiate, the responses they make to others, and generally, how they develop

their potential for healthy functioning. Both theory and past research support the view that a positive self-concept and high self-esteem are related to higher academic ability and attainment, whereas negative beliefs about the self are associated with lower ability, scholastic underachievement, and failure. Individuals who have a poor self-image are likely to underestimate their own abilities, anticipate failure, and may well stop trying when difficulties arise.

The major determinant of the self-concept is generally thought to lie in the early and enduring patterns of parent-child relations that underpin the emotional security of the growing child. The child's self-concept is formed by interactions with significant others, with the child coming to see himself or herself as others do. Positive self-esteem is enhanced by positive parental regard for the child, respectful treatment of the child, and the definition of clear boundaries and realistic expectations for the child's achievement.

The causal dynamics underlying the modest correlations often reported between intelligence and self-concept are necessarily ambiguous. One commonly held view is that the causality flows from intelligence to self-esteem, with a positive self-concept necessarily ambiguous. One commonly held view is that the causality-flow from intelligence to self-esteem, with a positive self-concept and adjustment only reflecting past achievement and intellectual ability. Thus, the correlation of intelligence and self-concept may reflect little more than a person's subjective appraisals of his or her own social or educational standing and scholastic aptitudes. A second view is that a favorable self-image may lead to positive expectations of future success, which, in turn, produce increased effort and motivation to succeed and subsequent favorable outcomes on measures of both ability and achievement. Furthermore, measures of adjustment, such as self-concept, may tap values and attributes that facilitate achievement, and thus mediate the relation between the two constructs. Unfortunately, the available

empirical evidence directly bearing on the relationship between self-esteem and ability is scant and often contradictory

Motivation to Achieve

We have already seen, in the context of casual attribution theory, that cognition and motivations may be intimately related. In this section, we put motivation center stage to consider how a person's motivations to strive for success relate to intelligence. Achievement motivation designates a general striving to perform one's best when the following two conditions hold: (a) the quality of one's performance is judged in terms of success or failure (b) a relevant standard of excellence applies. According to achievement motivation theory, all individuals have both a basic motive to approach an achievement-related goal and an antagonists motive to avoid failure, but the strength of these motives vary from person to person, and from situation to situation.

Parental expectations and standard of performances are believed to underlie the development of two key motivational tendencies in children-to-obtain praise and achieve success, on the one hand, and to avoid criticism and failure on the other. As children grow older, parental evaluations often become more demanding and critical and children become more sensitive to parental expectations. Thus, children strive harder to obtain parental praise and to achieve success, but also make an all-out effort to avoid criticism and failure. Low-anxious children tend to show a stronger motive to obtain praise than to avoid criticism, whereas anxious children show the opposite tendency. Low-anxious children show persistence at working on cognitive tasks, higher levels of performance at working on cognitive tasks, a higher level of performance at complex tasks, and a distinct preference for tasks of intermediate difficulty. By contrast, in anxious children, the motive to avoid failure becomes more salient and compelling than the motive to achieve success. In fact, both motives, that is,

fear of failure and the need to succeed, are stronger or high anxious compared with low-anxious children. Accordingly, high-anxious children would be expected to persist longer under continued success as well as to leave sooner under continued failure compared with less anxious children tend to orient to their own internal evaluations of their performance and to respond to the informational component of an adult's reactions rather than to social cue or contexts in which the reactions are made. By contrast, anxious children tend to avoid situations in which the likelihood of criticism is high.

The tendency to seek success and approach achievement-related goals is postulated to be a product of three factors (a) a relatively stable personality disposition to strive for success (need for achievement) (b) the (subjective) probability that one will be successful, and (c) the incentive value of success. If one of these values equals zero or near zero (e.g., the person feels his or her chances of success in a particular endeavor are nil or there is little point in doing well), the resultant multiplicative value will also be zero and no effort will be put forth by the individual to attain the goal. Similarly, the opposing force, the tendency to avoid failure, is posited to be multiplicatively determined by three factors: (a) the motive to avoid failure, (b) the probability of failure, and (c) the incentive value or negative affect (shame) associated with failure. Accordingly, achievement striving is postulated to be the result of an approach-avoidance conflict between the two opposing tendencies, with the stronger of the two tendencies being expressed in action.

Achievement motivation may influence intellectual development and performance in several ways. First, achievement motivation may determine the level of interest, striving and effort that persons invest in the development of their intellectual skills throughout their life experiences prior to a test. Because a school environment emphasizes competitive intellectual strivings, students with

strong competitive needs would be highly motivated to acquire intellectual skills to compete successfully with peers. Second, achievement motivation may help shape the level of attention, effort, concentration, and persistence applied in the actual evaluative or test situation. On the other hand the hypothesized association of achievement motivation with intelligence may be the result of the adaptation of a person's motive to intelligence. Thus, a person high in quantitative ability is likely to develop a motive to achieve in math. Furthermore, highly intelligent students develop a strong motivation to acquire or develop various intellectual skills tapped by IQ tests and to perform well in a testing situation.

Motivation theory predicts that only persons of average intelligence should be strongly motivated either to achieve or to avoid failure, depending on the relative strengths of their motivations for success or motivation to avoid failure. The very bright or very challenged students would not be expected to have achievement related dispositions aroused because the conventional competitive learning situation will be, respectively, either too easy or too difficult for them. Very bright students are expected to perform well in school and dull students poorly, regardless of motivation. Hence, performance differences as a function of motivation are relatively confined to group's intermediate ability. Some reviews have reported modest positive relations between need for achievement intelligence, but others conclude the correlation is not statistically reliable. Achievement motivation research may underestimate the context dependence of motivation. Successful entrepreneurs who left school with few qualifications may be highly motivated to succeed, but not at schoolwork. Achievement striving predicts a variety of indices of occupation performance.

Intelligence and coping with Psychological Stress

Stress arises when the perceived demand of the environment tax or exceed the individual's perceived capacity to cope with these demands. Thus,

perceptions of high intellectual capacity should reduce susceptibility to stress, provided that the person has the outcome expectancy that intelligent behavior will lead to more effective coping. Intelligence may be seen as a resource that facilitates personal growth and adjustment as well as one that possibly buffers the effects of environmental stress on stress reactions. Thus, intelligence may affect each of the phases of the stress process. Given the view that intelligence is a global form of adaptation to the environment, intelligent people might also be expected to be better adjusted, both socially and emotionally, than their less intelligent counterparts.

2.1.5 Personality, Gender, and Mental Health

Time urgency is one of the distinguishing characteristics of type-A personality. Type A persons are hard driving and competitive, they live under constant pressure, largely of their own making.

Koslowdky, (1998) has explored the relationship of commuting with various affective and physical consequences in relation with mental health. A model that describes the process includes three main antecedent variables: objective (commute-related and environmental) stressors, moderators and subjective (perceived difficulty of the trip) stressors.

Time urgency as a moderator variable has a cognitive component associated with it. During the commute, this manifests itself in the commuter who is acutely aware of the passage of time. Such an individual may look at his (her) watch all the time, may ask others if the time on the dashboard or overhead clock is really correct or may turn to the news station each hour or half-hour. For a commuter who is time urgent, the whole experience may be quite negative and strain responses may occur even before the commute actually begins. Deadlines, train schedules, and making connections are all time contingent and exaggerated

awareness of close critical points may be sufficient to bring about strain reactions.

Gender as another major source for individual difference has been examined in relation with mental health. Research indicates that women not only experience stress more than men, they also have more symptomatology than men. Women are exposed to more stressful life events than are men and, as a result they have higher rates of psychological distress. Women experience anxiety and mood disorders at a greater rate than men as a result of the kind of outcome measures that are typically used in research in this area. These studies tend to employ self-report measures of symptomatology. It is generally assumed that if an individual is coping reasonably, well, she/he is free from anxiety and depression. This conceptualization of effective coping leads to a bias in research findings given that women, more than men, often express distress. Some argue that women appear more distressed because they are more likely than men to report symptoms of all kinds. Gender-role factors contribute to the degree to which individual report symptoms and seek help. Traditional masculine and feminine gender roles differ in the amount of vulnerability and permissibility in seeking help from others. Traditionally, men are seen as strong and invulnerable, thus restraining men from showing symptoms of mental illness or seeking help. The traditional feminine gender role allows and even encourages vulnerability to problems, thus resulting in the greater reporting of illness symptomatology.

Notwithstanding women's greater "openness" regarding their psychological symptomatology, research indicates many reasons for women's greater distress. Despite their greater employment, women still tend to be concentrated in "female" occupational spheres including education, health care, clerical domestic, and service industries. Women have less promotional opportunities, make less money, and often do not have access to membership in

the "old boys" network," all of which restricts their advancement on the job. Women professionals and managers are subject to negative stereotyped attitudes that portray women as doing a poor job fitting into the male work world. Sex discrimination and harassment remain endemic in the workplace. Such attitudes not only harm salary and promotion prospects for women, they are also detrimental to their mental health.

Reproductive life events including menstruation, pregnancy, childbirth, and menopause are stressful for women, and fluctuations in women, hormones do not explain responses to them. Research shows that neuroendocrine responses are altered by social roles and other sociocultural variables. Personal and social coping resources affect how women respond to these changes, which necessitates placing reproductive life events within a broader psychosocial framework in order to understand their effects on women.

2.1.6 Empirical Studies

A major part of the empirical studies on MH focuses on that view of MH as the absence of the mental illness. Limited number of studies available on positive aspect of MH has been summarized as follows.

2.1.6.1. Physical health and mental health

Both physical and mental health is related. In one study, Sam Sanadna Raj et al. (1998) investigated the relationship between physical health and mental health among 260 male and 252 female higher secondary school students in Tamil Nadu. They studied ten physical health variables and six mental health variables. Among the 60 correlations computed between physical health and mental health variables, 57 correlations were significant at the 0.01 level and the remaining three were significant at the 0.05 level

Those who enjoy good physical health are most likely to have good mental health, which includes mental poise and balance, emotional control etc. Participation in games and sports presents opportunities for promoting emotional health and preventing delinquency, says Kamlesh (1983). He cites studies by Hardman, Kane who have confirmed that athletes with higher performance are more emotionally sound and less anxious.

In two field experiments with middle-aged adults the effects of exercise on well being were investigated by Alfermann and Stoll (2001). In both experiments participants were randomly assign to either experimental or control group. The subjective well being was assessed before and after six month programme. The results pointed to the fact that exercise is one, but not the only strategy to improve mental health

Another study examines eating attitudes, body satisfaction, reasons for exercise and general psychological well being in female nonathletes and Division III college athletes. A total of 115 nonathletes and 94 athletes completed measures of eating attitudes, body satisfaction, trait affect, reasons for exercise, and perceived self-competence. On the majority of measures, the scores of athletes revealed less eating disorder symptomatology and healthier psychological functioning than the scores of nonathletes. These results indicate that female athletic involvement can be associated with healthy eating and psychological functioning.

More specifically, the effect of different exercise frequencies on psychological health of older adults was the focus of their study (Watanabe and Takeshima, 2001) indicated that different frequencies of exercise showed improvements of psychological health more than in the control group. Therefore, these results suggested that those taking exercise should participate in exercise programme more than twice a week to gain psychological benefits.

In the case of athletes' training, the frequency of physical exercise would be sufficient so as to produce psychological benefits.

Maltby and Day (2001) go one step further. They searched the relationship between exercise motive and psychological well being. Among individuals exercising for less than six months, a number of extrinsic motivations for exercise were significantly related to poorer psychological well being. Among individuals exercising for six months or more, a number of intrinsic motivations were significantly related to better psychological well being.

Evidence obtained from anecdotal records, clinical observations, epidemic logical research and prospective studies suggest that physical activity may reduce an individual's risk for developing depression and may alleviate symptoms in persons with mild to moderate depression (O'neal et al., 2000).

The ability of individuals to insulate, protect, or inoculate themselves against the stresses of life through the regular exercise is called stress inoculation. Research shows that the psychological benefits associated with regular exercised do not normally require an increase in physical fitness (Rejeski, et al. 1998). Aerobic fitness, however, thus appear to be a necessary precursor to the stress inoculation effect. Aerobically fit individuals appear to be inoculated against stress, illness, and the general hassles of life to a greater extent than less aerobically fit individuals.

A positive self-concept is valued as a desirable outcome in many disciplines such as sport, exercise, health, educational, developmental, clinical, and social psychology. Self concept is frequently posited as a mediating variable that facilitates the attainment of other desired outcomes such as physical activity, exercise adherence, or health related physical fitness (Marsh, 2002). Even in studies in which self-concept is not the major focus of interest, it is useful to

evaluate self-concept because of its importance as a mediating variable that facilitates the attainment of other desired outcomes cited above.

Exercise appears to have a positive relationship also with self-concept (Sonstroem, 1984., Sonstroem, et al., 1994., Biddle, 1995). Sonstroem (1984) suggested that these changes in self-concept might be associated with the perception of improved fitness, rather than with actual changes in physical fitness. Although studies so far have not proved that changes in physical fitness produce changes in self-concept, exercise programs seem to lead to significant increases in self-esteem, especially with subjects who initially show low self-esteem.

Parallel to the sport personality research, the exercise and self-concept research has shown that it is best to think of self-concept of self-esteem not only as a general trait (global self-esteem) but also as including numerous content-specific dimensions, such as social self-concept, academic self-concept, and physical self-concept. As you might expect, research shows that exercise participation has the greatest effect on the physical dimension of self-concept (Marsh & Sonstroem ; 1995Fox, 1997).

In two field experiments with middle-aged adults the effects of exercise on self-concept and well-being were investigated. In both experiments participants were randomly assigned to either experimental or control groups. In experiment 1 a total of 24 female and male participants took part in an exercise program for six months. Physical self-concept, self-esteem, and subjective well-being were assessed before and after the 6 month program. Compared with wait-list control group (13 participants), exercisers improved significantly in physical self-concept and decreased in psychosomatic complaints. In Experiment 2, 57 female and male adults participated in exercise programs for six months. Placebo attention groups were the control group. The placebo attention group

members (36) took part either in relaxation or back training. Self-concept and well-being measures were assessed three times: before and after the 6 months after the program's completion. The Exercise and Self-Esteem Model (EXSEM) of Sonstroem, Harlow and Josephs (1994) could be partially replicated by the authors (Alferman and Stoll 2001). It assumes that exercise first influences physical self-concept such that people develop a higher degree of physical competence and physical acceptance. This subsequently should lead to heightened feelings of global self-esteem. In addition, the main effects of time showed that not only exercise but also other kinds of intervention were able to influence the dependent variables. Motor performance tests likewise indicated that participants of all groups improved over time. The results point to the fact that exercise is one, but not the only strategy to improve mental health.

Ho et al. (2001) compared male and female college athletes' global self-esteem and physical self-perception. The results showed that masculine and androgynous college athletes have significantly higher global self-esteem athletes have significantly higher global self-esteem than feminine and undifferentiated college athletes. On the issue of athletes having higher self-esteem than non-athletes, the present study confirmed that gender non-athletes, the present study confirmed that gender roles like androgynous or masculine were more prominent than that of feminine and undifferentiated for college athletes as they were more competitive in nature.

In a study conducted by Mathur (1981), the mean of the self-esteem scores was higher for the student participants in sports, but not significantly different than the mean self-esteem score of the non-participant students in sports.

A study entitled as "Motor skills and self-esteem in children in a private and a public school", confirmed the results of earlier studies showing that there is a strong relation between motor competence and self-esteem. More interesting is

that the hypothesis that such a relation is influenced by type of environment (i.e., school setting) was supported. However, more research is needed before final conclusions with respect to the relation between environment and self-esteem/motor competence can be made (Moea, et al.2001).

2.1.6.2 Intelligence, Creativity and Mental Health

Asha (2003) examined the combined effect of creativity and intelligence on stress and mental health of college students. The sample consisted of 126 post-graduate students (61 male and 65 female students). Descriptive Test of Creativity, Mathew Test of Mental Abilities, Students Academic Stress Scale and Mental Health Inventory were used. The results indicated that the high creative high intelligent groups of male and female students experienced less stress and better mental health than the less creative-less intelligent male and female students. The study suggested that cognitive excellence is a resource for adapting to stressful conditions and fostering mental health.

The available literature regarding the relationship of physical activity and mental health in its clinical point of view suggests that exercise can reduce clinical symptoms of mental illness. For example O'neal et al., (2000) says that evidence obtained from anecdotal records, clinical observations, epidemic logical research and prospective studies suggest that physical activity may reduce an individual's risk for developing depression and may alleviate symptoms in persons with mild to moderate depression.

Kamlesh (1983) asserted that the sportsmen enjoy better physical health, which ultimately leads to sound mental health.

2.1.6.3 Reviews on mental health: an overview

Regarding the review of related literature on mental health some conclusions can be drawn.

1. Many factors are potential to influence mental health of sport person which includes biological factors such as neural mechanisms, neuroendocrine response, ANS activity etc; psychological factors such as self-concept, temperament, personality traits, emotion, motivation intellectual ability etc. on one hand and social factors like interpersonal relations, social support etc. on the other hand.
2. The ways by which mental health related to physical activities/ sport, emotions and intelligence are different.
3. Most of the studies suggest a positive link between mental health and motor activities.

2.2 Personality

The goal of sport personality research is to explain the role of personality in sport in a way that is systematic, replicable, and predictive. To achieve this goal, a theoretical perspective is needed. Theories are simple systematic explanations of phenomena that are derived from the accumulation of empirical evidence.

Many theories have attempted to define personality, and they agree on one description: uniqueness. In essence, personality refers to the characteristics - or blend of characteristics-that make a person unique. (Weinberg and Gould, 1999)

Personality is the sum of those characteristics that make a person unique. The study of personality helps the coaches, sports psychologists and other professionals to work better with students, athletes, and exercisers.

2.2.1 A schematic view of personality structure.

One of the best ways to understand personality is through its structure: A psychological core, typical responses, and role-related behavior.

Psychological Core

The most basic level of personality is called the psychological core. The deepest component, it includes attitudes and values, interests and motives, and beliefs about oneself and one's self-worth. In essence, the psychological core represents the centerpiece of personality. For example, one's basic values might revolve around the importance of his or her family, friends, and religion in life.

Typical Responses

Typical responses are the way we each learn to adjust to the environment or how we usually respond to the world around us. For example, one might be happy-go-lucky, shy, and even-tempered. Often typical responses are good indicators of one's psychological core. That is, if one person consistently responds to social situations by being quiet and shy, is likely to be introverted, not extroverted. However if someone observed him being quiet at a party and from that evidence alone concluded he was introverted, that person could well be mistaken-it may have been this particular party situation that caused him to be quiet. One's quietness may not have been a typical response.

Role-Related Behaviour

How one acts based on what he perceives his social situation to be is called role-related behavior. This behavior is the most changeable aspect of personality. His behavior will change as his perceptions of the environment changes. Different situation require playing different roles. Roles can conflict

with each other. For example, a parent who is coaching her child's soccer team might feel a conflict between her coaching and parenting roles.

The psychological core is not only the most internal of the three levels and the hardest to get to know, it is also the most stable part of personality, it remains fairly constant over time. On the other end of continuum are the most external, role-related behaviors, which are subject to the greatest influence from the external social environment. Usually one person's responses lie some where in between, however, because they result from the interaction of psychological core and role-related behaviors.

Both stability and change are desirable in personality. The core, or stable, aspect of personality provides the structure we need to function effectively in society, whereas the dynamic, or changing, aspect allows for learning.

The sports psychologists, coaches, physical educators, trainers, and exercise leaders can be more effective when they understand the different levels of personality structure that lie beyond the role-related behaviors particular to a situation. Getting to know the real person (i.e., the psychological core) and his or her typical modes of response produces insight into the individual's motivations, actions, and behavior. In essence, we need to know what makes people tick to choose the best way to help them. Especially when working long-term with people, such as over a season or more, it's helpful to understand more about their individual core values (i.e. psychological core).

2.2.2. Approaches to personality

Psychologists have looked at personality from several viewpoints. Four of the major ways of studying personality in sport and exercise have been called this psychodynamic, trait, situation, and interactional approaches.

2.2.2.1 The Psychodynamic Approach

Popularized by Sigmund Freud and neo-Freudians, such as Carl Jung and Eric Erickson, the psychodynamic approach to personality is characterized by two themes (Cox, 1998). First emphasis is placed on unconscious determinants of behavior, such as what Freud called the id, or instinctive drives, and how these conflict with the more conscious aspects of personality, such as the superego (one's moral conscience) or the ego (the conscious personality). Second, this approach focuses on understanding the person as a whole, rather than identifying isolated traits or dispositions.

The psychodynamic approach is complex; it views personality as a dynamic set of processes that are constantly changing and often in conflict with one another (Vealey, 1992). For example, those taking a psychodynamic approach to the study of personality might discuss how unconscious aggressive instincts conflict with other aspects of personality, such as one's superego, to determine behavior. Special emphasis is placed on how adult personality is shaped by the resolution of conflicts between unconscious forces and the values and conscience of the superego in childhood.

Although the psychodynamic approach has had a major impact on the field of psychology, especially on clinical approaches to psychology, it has had little impact in sport psychology. Swedish sport psychologists Apitzsch, (1995) has urged North Americans to give more attention to this approach, however, pointing out the support that it receive in non-English studies of its value to sport. Apitzsh has measured defense mechanisms in athletes and used this information to help performers better cope with stress and anxiety. Specifically, he contends that athletes often feel threatened and react with anxiety. As a defense against their anxiety, athletes display various unconscious defense mechanisms, such a maladaptive repression (the athletes freeze or become paralyzed during play) or

denial of the problem. When inappropriate defense mechanisms are employed, the athletes' performance and satisfaction are affected. Through psychotherapy, however, athletes can learn to effectively deal with these problems.

A weakness of the psychodynamic approach is that it focuses almost entirely on internal determinants of behavior, giving little attention to the social environment. For this reason many contemporary sport psychology specialists do not adopt it, however, not all the behavior of an exerciser or athlete is under conscious control, and at times it may be appropriate to focus on unconscious determinants of behavior. For example, a world-class aerial skier experienced a particularly bad crash, and when he recovered, he could not explain his inability to execute the complex skill he was injured on. He described that in the middle of executing the skill he would freeze up, "like a deer caught in headlights." Moreover, extensive cognitive-behavioral psychological strategies which have been successfully used with other skiers were not effective in helping him. The athlete eventually might be referred to a clinical psychologist who takes a more psychodynamic approach to the problem and might succeed with that method.

2.2.2.2 The Trait Approach

The trait approach assumes that the fundamental units of personality - its traits - are relatively stable. That is, personality traits are enduring and consistent across a variety of situations. Taking the trait approach, psychologists consider that the causes of behavior generally reside within the person. They minimize the role of situational or environmental factors. Traits are considered to predispose a person to act a certain way, regardless of the situation or circumstances. If an athlete is competitive, for example, he or she will be predisposed to playing hard and giving all, regardless of the situation or score. A predisposition, however, does not mean that the athlete will always act this way; it simply means that the athlete is likely to be competitive in sport situations.

The most noted of the trait proponents in the 1960s and 1970s included Gordon Allport, Raymond Catell, and Hans Eysenck. Cattell developed a personality inventory with 16 independent personality factors (16PF) that he believed to describe a person. Eysenck viewed traits as relative, the two most significant traits ranging on continuum from introversion to extroversion and from stability or emotionality. They argued that personality could best be understood by considering traits that are relatively enduring and stable over time.

However, simply knowing an individual's personality traits will not always help us predict how he or she will behave in a particular situation. For example, some people anger easily during sport activity, whereas others seldom get angry. Yet the individuals who tend to get angry in sport may not necessarily become angry in other situations. So simply knowing an individual's personality traits does not necessarily predict whether he or she will act on them. The predisposition toward anger does not tell you what specific situations will provoke that response. This observation led some researchers to study personality by focusing on the situation or environment that might trigger behaviors, rather than personality traits.

2.2.2.3 The Situation Approach

The situation approach argues that behavior is determined largely by the situation or environment. It draws from social learning theory (Bandura, 1977), which explains behavior in terms of observational learning (modeling) and social reinforcement (feedback). Simply stated, this approach holds that environmental influences and reinforcements shape the way one behaves. He might act confident, for instance, in one situation but tentative in another, regardless of his particular personality traits. Furthermore, if the influence of the environment is strong enough, the effect of personality traits will be minimal. For example, if the person is introverted and shy, he might act assertively or even aggressively if

he sees someone getting mugged. Many football players are gentle and shy off the field, but the game (the situation) requires them to act aggressively. Thus, the situation would be a more important determinant of their behavior than would be their particular personality traits.

Although the situation approach is not as widely embraced by sport psychologists as the trait approach is, Martin and Lumsden (1987) contend that the behavior in sport and physical education can be influenced by changing the reinforcements in the environment. Still, the situation approach, like the trait approach, cannot truly predict behavior. A situation can certainly influence someone's behavior, but other people will not be swayed by the same situation.

2.2.2.4 The Interactional Approach

The interactional approach considers the situation and person as co determinants of behavior—that is, as variables that together determine behavior. In other words, knowing both an individual's psychological traits and particular situation are helpful to understand behavior. Not only do personal traits and situational factors independently determine behavior, but at times they interact or mix with each other in unique ways to influence behavior. For example, a person with a high hostility trait won't necessarily be violent in all situations (e.g., as a frustrated spectator at football game in the presence of his mother). However, when the hostile person is placed in the right potentially violent situation (e.g., as a frustrated spectator at a football game with his roughneck friends), his violent nature might be triggered. In that particular situation violence might result (e.g., he hits a spectator from the other team who boos his or her favorite player).

Most sport and exercise psychologists favor the interactional approach to studying behavior. Bowers (1973) found that the interaction between persons and situations could explain twice as many behaviors as traits or situations alone.

The interactional approach requires investigating how people react individually in particular sport and physical activity settings.

For example, Fisher and Zwart (1982) studied the anxiety that athletes, showed in different basketball situations-before, during, and after the game. Here are a few of the game situations.

- ◆ With 2 seconds left and score tied 70-70, you have just been fouled and your free throw might win the game.
- ◆ The crowd is very loud and is directing most of its comments toward you.
- ◆ You have just made a bad play and your coach is criticizing you.
- ◆ You are in the locker room after losing a game you really expected to win.

Given these situations, the athletes were asked to report to what degree they would react in these ways (worded as in the study):

- a. Get an uneasy feeling
- b. React on overemotionally
- c. Want to avoid the situation
- d. Get a “choking” feeling.
- e. Enjoy the challenge

The athletes' reaction to each basketball situation are colored by their particular mental and emotional makeup. Jeff, who is usually anxious and uptight, may “choke” before shooting free throws with a tied score, whereas Pat, who is laid back and less anxious, might enjoy the challenge.

Another approach to personality types involves specifying certain key characteristics or extreme scores that must be manifest before any individual is

said to fit the type. In this approach people who do not fit the type are simply ignored, and attention is focused on the relatively pure cases that fit the 'strike zone' for the type in question. For e.g. in base ball the 'strike zone' is over the plate and at a specific height- between the batters' knees and just below the shoulders. Anywhere else is the ball zone. Similarly, if people's trait characteristics all fall within a given 'type zone', fitting a particular pattern or cluster, we can speak of a psychological type. People must show certain specific personality characteristics to a certain degree before they are typed. The 'strike zone' approach is also used to identify type A and type B people. Type A persons are hard driving and competitive. They live under constant pressure, largely of their own making. They seek recognition and advancement and take on multiple activities with dead lines to meet. Much of the time they may function well as alert, competent, efficient people who get things done. When put under stressful conditions they cannot control, however they likely to become hostile, impatient, anxious, and disorganized.

Type B persons are quite opposite. They are easy going, non-competitive, placid, and unflappable. They weather stress easily. On a tread mill test, Type A's expend more energy and use a greater proportion of their oxygen capacity than do Type B's, yet they rate their fatigue as less severe. If asked to judge when a minute has lapsed Type A's judge the periods as significantly shorter than do Type- B's .In other words, Type A's show a push toward achievement, a suppression of the cost(fatigue) to themselves, and impatience with delay.

It is particularly interesting that when placed in long- lasting stressful situations over which they have little control, Type A's tend to give up. They show a kind of helplessness and become less responsive and less effective than Type B's. At first, they struggle to control the situations; but when they fail to do so they stop coping.

2.2.3 Empirical studies

2.2.3.1 Sports persons and personality patterns

Is there a relationship between personality type and sport preference? How do people choose the sport they participate in? Would it be a matter of personality preference? Are certain personality types more attracted to certain sports, like in careers? Why some people prefer individual sports over team sports?

In order to answer questions related to athletes' personality type, over five hundred athletes were tested and evaluated by Versari (2001). To examine the relationship between personality types, sport preference and performance, team and individual athletes' personality profiles were designed. Results indicate that teams exhibit a predicable personality profile and that by understanding the psyche of the athlete, performance and team productivity can be enhanced. Interpersonal communication amongst players and coaching staff can improve; players can take advantage of their personal preferences and strengths and work on developing other areas identified in the assessment process. Optimal communication and performance can be achieved by identifying the athletes' preferred learning and personality styles.

Personality types are attracted to and succeed in certain sports just like they do in certain occupations. The more athletes and coaches understand about their personalities and the team profile, the more productive they can be. Versari points out certain Benefits of Understanding the Personality Profile of Athletes as

1. Helps assess the fit between persons and sports and even positions in a team.
2. Helps coaches and athletes in a strained relationship analyze the source of the conflict and build a strategy to reduce it.
3. Can lead to motivated and committed behavior.
4. Useful for the athlete and sports professional in career

and life planning, self-management (such as stress/time management) and interpersonal skills areas and 5. Many applications in team building and management.

Empirical research findings are rather inconclusive on the issue whether the outstanding athlete possesses a personality profile or particular personality traits dissimilar to those displayed by the average athlete. In turn, whether the personality of the athlete change due to participation in sport is a question of equal importance. Some of the leading observations would be that sport allows the athlete to channel his natural aggressive tendencies, it helps into build character, it makes him a competition, it promotes the development of leadership potential, sportsmanship, and good citizenship. Other self-ascribed analysts might suggest that sport causes an increasing hostility, it encourages cheating and a win-at-any-cost attitude, it is ego-inflating beyond the practical reality of the situation, and is generally damaging to personality development (Singer, 1975).

Pachauri (1999) feels that certain personality attributes are important to achieve success in sports. Another popular belief is that certain personality attributes may be developed or modified through sport participation. Both of these issues have been extensively investigated over the last three decades. Reviewing the studies concerned, the author remarks that no distinguishable athletic personality has been shown to exist. No consistent dispositional personality differences between athletic sub groups have been shown to exist. But he suggests that although many researchers in sport psychology feel that the area of sport personality research has yielded no useful findings, it may be argued that this is not true. The sport personality research of the last three decades has progressed across paradigms, theories and assessment methods to provide sport psychologists with some definite findings.

2.2.3.2 Personality of Sports and Non-Sports Persons

Another way to understand the peculiarities of athletes' personality is to compare it with that of nonathletes. One such large comparative study of athletes and non-athletes tested almost 2,000 college males using Cattell's 16PF, which measures 16 personality factors or traits (Schurr, et al. 1977). No single personality profile was found that distinguished athletes (defined for the study's purposes as a member of a university intercollegiate team) from non-athletes. However, when the athletes were categorized by sport, several differences did emerge. For example, compared with non-athletes, athletes who played team sports exhibited less abstract reasoning more extroversion, more dependency, and less ego strength. Further, compared with non-athletes, athletes who played individual sports displayed higher levels of objectivity, more dependency, less anxiety, and less abstract thinking.

Hence, some personality differences appear to distinguish athletes and non-athletes, but these specific differences cannot yet be considered definitive. Schurr et al., (1977) found that team-sport athletes were more dependent, extroverted, and anxious but less imaginative than individual-sport athletes. Of course, it is possible that certain personality types are drawn to a particular sport, rather than that participation in a sport somehow changes one's personality. The reason for these differences remains unclear.

Another comparative study of the same kind to find out whether participation in sports event has any relationship with state and trait anxiety and with the expression of anger, Spielberger's scales measuring these three variables were given to 100 high school student of whom 50 represented their school in sports: while the rest never participated in any sport activity. Only male students in the 10th, 11th and 12th standard were studied. Analysis of the results using the critical ratio revealed that participation in sports has significant relationship to

state and trait anxiety and anger-in dimension. But ,no significant difference between sports and non-sports students on anger –out and anger expression scores, reveals that participation in sport does not have any bearing on these two factors. In fact, on anger expressions both group of students have scored high indicating that during adolescence anger expression is a common feature. (Rajaram and Swaminathan,1990)

2.2.3.3 Personality of male and female sports persons

In their (Alittm; & Shahriar, 2001) comparative study of psychological characteristics of male and female athletes and non-athletes students,626 students from Universities in Tehran, Iran were studied. The results of the study show clear difference in psychological abilities between athlete and non-athlete students. Subjects who take part in physical activity show higher levels of self-confidence, concentration, motivation, controlling psyche-level, goal setting, and imagery. Further more those subjects who exercise regularly but are not member of university teams report higher levels of these abilities. Analysis of Variance revealed no differences but athletes showed high scores on all measures.

As more women compete in sport, it is important to understand the personality profile of female athletes. In 1980,Williams found that successful female athletes differed markedly from the ‘normative’ female in terms of personality profile. Compared with female non-athlete, women athletes were found to be more achievement oriented, independent, aggressive, emotionally stable, and asser:ive. Apparently, outstanding athletes have similar personality characteristics, regardless of being male or female (Weinberge and Gould,1999)

Lipowski and Liposka (2001) conclude their study asserting that neuroticism is the personality feature most strongly connected with women’s participation in physical recreation. The higher level of this factor, the smaller

amount of recreation forms, shorter period of recreation practice. This enables arguing that Neuroticism is not favourable for health-promoting behaviours. Neuroticism correlates negatively with general life satisfaction and own health esteem which should be a factor motivating to undertaking physical activity in order to improve one's health. The opposite relation occurs in case of Extraversion and number of forms recreation, which is a result of the fact, that extravert women require various stimulation. The extraverts, as generally more satisfied with their own lives, undertake physical activity in order to keep their health state rather than to improve it. It is probably due to their tendency for accepting the present state. As could have been presumed, Conscientiousness and Openness to Experiences are positively correlating with number of various forms of recreation, further more Conscientiousness is related to the time of its duration. Interesting results concern analysis of agreeableness. Women whose aim in recreation is keeping good frame of mind are more frequently characterized by the high level of this feature, while the ones with lower Agreeableness more often aim to improve their health.

What seems to be quite crucial is search for the relation between health-promoting behaviours with personality features of performing them persons. The task of instructor is suggesting in co-operation with psychologist the type of recreation corresponding to the individual preferences rooting in personality structure. Thanks to such a procedure the fuller realization of health improving function of physical recreation is possible. It is especially important in case of women, who are generally less interested in movement than men.

2.2.3.4 Sports disciplines and personality

The scientific problem is that in sport psychology literature a major disagreement is common about existence of character differences between sports

persons representing different kinds of sports. 54 track-and-field athletes and 73 basketball players were studied by Malinauskas (2001) to solve the same.

Research showed that female track-and-field athletes have slightly weaker communicability than female basketball: two thirds of female basketballs have communicability stronger than average, and more than a half of studied female track-and-field athletes have average or weaker than average communicability. Therefore, on the basis of interpretation statements for study findings, it is possible to say that female students-track-and-field athletes are reserved, critical, calm, distant, preferring things to people avoiding compromises in their attitudes, pedantic, always keeping accepted order. It is possible to think that they slightly easier than track-and-field athletes adapt to situation when many unsolved problems appear. However, differences according to communicability between male and female track-and-field athletes are not statistically significant.

Female athletes, compared with male track-and-field athletes, are just slightly calmer, slightly more peaceful, tolerant of traditional difficulties, believing in what they were reached, what is "tried". The finding is that female students - basketballs, compared with female track-and-field athletes, has stronger communicability, and is more dominant, better adaptable. Male track-and-field athletes, compared with male basketballs, have weaker communicability: just one third of track-and-field athletes have stronger than average community, and two thirds - average or weaker than average communicability. Differences between men and women (basketballers) are not statistically reliable: Men's and women's analysis showed that statistically significant differences exist between basketballs and track-and-field athletes according to communicability. Basketballs are more cheerful, emotionally more expressive, more attentive, more inclined to be with people and in socially

impressive environment. They are less afraid of criticism, easier remembering people's names, easier joining into groups of active people. Obtained data do not confirm the alleged thought that women are more communicable than men.

According to abstract thinking male and female track-and-field athletes do not have statistically significant differences male and female basketballs also do not differ significantly. According to abstract thinking statistically significant differences were found between basketballs and track-and-field athletes (male and female together). Taking into account interpretation for Cattell's test factors, it can be said that researched basketball players are brighter, clever, more quick-witted, faster learning new things. Researched track-and-field athletes perceive more concretely and literally.

Emotional stability is also important character trait. From obtained data it's not possible to say whether female track-and-field athletes are emotionally more stable than female basketballs. Weaker than average emotional stability is characteristic to 6 female basketballs and just to one female track-and-field athlete. Better than average indicators of this trait are characteristic to a little more than half of respondents. Clear emotional stability (stronger than average) is characteristic to 11 male track-and-field athletes (from 21) and 24 basketball players (from 49).. Male and female track-and-field athletes are not different statistically significantly, also there isn't statistically significant difference between male and female basketballs: However, groups of students of researched kinds of sports (basketball and track-and-field athletics) are different statistically reliably track-and-field athletes are emotionally more stable. Obtained data confirm the thought that, taking into account interpretation statements for Cattell's test factors, track-and-field athletes are emotionally more stable, not avoiding reality, more patient, regularly thinking about life, having stronger spiritual power, more able to keep strong morals, more able to obey and

adopt, if emotional problems appear. Basketballs (male and female) are more neurotic, more tired more irritable, more actively expressing their dissatisfaction Malinauskas (2001).

Bawa and Debnath, (1999) tried to explore personality characteristics of male gymnasts in Indian context. Personality plays important role in achieving high performance in all fields of life including games and sports and gymnastic. The investigation has been conducted to determine the relationships of various personality traits with competition performance in gymnastics. The other purpose of the study was to determine significance of difference in personality characteristics among high, mediocre, low performers in competitive gymnastics. The study has been conducted on 108 Indian male gymnastics participated in the Senior National Gymnastics Championships. 16 P.F. Questionnaire by Cattle and Eber was administered on each subject. The total sample was divided into three groups on the basis of competition performance scores, ie. high performance group (HPG), mediocre performance group (MPG) and low performance group (LPG). Person's Product Moment correlation was applied to compute relationships of various personality traits with that of competition performance in case of high performance groups. One way Analysis of Variance (ANOVA) was applied to find out the significance of differences in various personality characteristics among the three groups. Scheffe's Post hoc. 't' was applied to find out the significance of differences on these personality characteristics in which 'F' ratio found was significant. The results of the study reveal statistical significant negative correlation between Factor F and competition performance; Factor 1 and competition performance; Factor M and competition performance. The score obtained by each gymnast in compulsories competition was considered as competition performance of each gymnast. It has also been found that high performance group is more reserved, more sober, more stable, more tough-minded and more practical when compared with mediocre

and low performance groups. The results also reveal that mediocre performance group is tough-minded and more practical than low performance group.

Cricket is a game demands specific skills and tactics compared to any other sport. Shukla et al. (1997) tried to explore the difference between elite and non-elite players on their personality. They say that the participation in sports will acquire certain behavioural patterns specific to the sports setting they encounter of re-inforcement, contingencies are strong and consistent enough to condition certain responses. Certain personality traits can be learned while participating in any endeavor including sports. The study was based on a sample of 240 Ranji Trophy cricket players of 15 teams, winners and runners and third place holder were selected from five zones (East, West, North, South and Central) in India during 1987-88. Non sportsmen 232 were randomly selected having sex as controlled variable who never participated in sports and were medically fit. Cattell's sixteen personality factor (16 PF) Questionnaire was given to both groups. With the help of computer the multiple discriminate factor analysis was computed at 0.01 level of confidence. The study results support the earlier findings that the elite athletes differed significantly between a successful and unsuccessful athlete on psychological factors and personality traits (Cratty, 1973., Mahoney & Avenor 1977., Kamlesh, 1989).

2.2.3.5 Nature of sport and personality

Some other authors have tried to trace out the personality features of athletes in tune with athlete's particular sport group. This group may be based on various criteria. Supinski, et al. 2001, for e.g. Analyzed a cluster of selected personality features especially those, which are suspected to have an immediate or intermediate relationship with the kind of practiced sport. It has been endeavored to construe a "model" of psychological characteristics bound up with the selection and functioning of competitors, in particular sport categories; the

description of differentiation of competitors, representing various sports and who are characterized by the selected types and features of personality. The sport category has been determined here according to pressure, which is exerted on an opponent. The group comprised 1259 persons, amongst them 665 professional sportsmen and 594 persons who do not coach sport, (control group), all aged 19-30. There were representatives of 37 sport categories amongst the sportsmen. The model of personality traits that has been created by the authors does not fully give grounds to predict how to subordinate the concepts to the particular sport category (58% cases have been correctly qualified). The highest significant statistical predictive value has been received for an “intermediate pressure exerted on an opponent”. The results, which have been analyzed, indicate to the relationship of some psychical features with the requirements aimed at particular sports. The differentiation of the models and personality types describe some tendencies, though they are not always very distinct. The selection of the subjects (the students of The Wrochaw Sport Academy), on one hand correct (uniformity of the subjects in respect of, for example, interests, education), on the other hand rejects the group of professional competitors.

On large comparative study of athletes and non-athletes tested almost two thousand college males using Cattell's 16 PF which measures 16 personality factors. No single personality profile was found that distinguished athletes from non-athletes. However when the athletes were categorized by sport several differences did emerge. Compared with non-athletes athletes who played team sports exhibited less abstract reasoning, more extroversion, more dependency, and less ego strength. Further compared with non-athletes, athletes who played individual sports displayed higher levels of objectivity, more dependency, less anxiety, and less abstract thinking (Schurr. et.al., 1977).

2.2.3.6 Sport performance and personality

Predicting athletic achievement from personality characteristics has long been considered one of the most attractive applications in sport psychology (Apitzch, 1995). Yet, despite its intuitive appeal, the overall progress in this area has been quite disappointing (Vealey, 1992). Repeated attempts to empirically examine the role of personality in sport are still far from establishing a consistent pattern of personality predictors of athletic behaviour. Some findings do indicate personality differences associated with levels of achievement in a number of sports, such as basketball, American football, endurance sports, and rowing. However, these findings are largely hardly generalisable. Why this lack of progress? The widely acknowledged lack of methodological and conceptual rigour in “sports personology” (Vealey, 1989) also seems to confirm it. In particular, sport psychologists’ cavalier pursuit of personality seems to largely ignore the fundamental developments in the mainstream personality research. The two most commonly overlooked principles are the long-term nature of personality influences and their moderating - rather than direct - effects in predicting outcomes of importance, such as job performance and educational attainment. Regarding the former, personality does matter when such critical long-term issues as career prospects are at stake. This fundamental influence is also likely to reveal itself if personality-performance relationship is examined in the context of the life-span (Vealey, 1992). Any serious life-span operationalisation of personality influences on sport behaviour requires rigorous application of expensive longitudinal methodology, which has been repeatedly called for, while the cross-sectional approach remains less than convincing. Second, the latter principle explains why the majority of reported direct personality effects on athletic performance are so small. Personality is a source of moderator variables, and the search for their effects in sport has been largely misplaced. Personality variables are more likely to show moderating interaction -

rather than mair. - effects such as influencing the likelihood of converting one's ability into achievements. On the other hand, for two athletes of similar physical ability (or "potential"), personality is what is likely to make a difference in their ultimate sporting achievements.

In one study by Aidman and Bekerman (2001), three distinct groups of players were identified: elite (senior players), non-elite (reserves) and sub-elite ("swingers" players who played at both levels) groups were found to be predictably different on Self-discipline, Achievement Striving and Neuroticism. Three categories of games played in the regular season were identified: "Close Games" that were in dispute for almost the entirety of the game, 'Easy Wins' where the result was well in the team's favor most of the way and no longer in dispute and 'Bad Losses' where they were well beaten most of the way and no longer in the contest. Interactive effects of personality and playing conditions (easy win, bad loss, or close game) on player performance were analyzed through a series of Hierarchical Regression Analyses. In particular, Self-discipline and Neuroticism significantly influenced performance in the "easy win" games, whereas performance in "close" games was affected by Neuroticism, Self-liking, Self-competence and Global Self-worth.

Further, these game conditions were found to interact with player perceptions of somatic stress response ("exciting" versus "threatening") in influencing player performance, which supports the hypothesized role of stress appraisal - and not the absolute levels of anxiety - in determining athletic performance at elite level. Players, who report an overly threatening appraisal of their somatic stress responses, perform more poorly in general and to a much greater extent when incurring a heavy loss, as shown with far lower scores on average Credits. Players who report being highly excited by their somatic stress response, perform equally well in bad losses regardless of threatened they feel by

stress, and perform with very little, if any difference, in games where they are winning well. The data suggests, however, that how these players perform in close games depends on how threatened they feel by their own somatic stress response, with those who report being highly threatened, tending to perform better. The data show that the pattern of performance deteriorates as a player feels more threatened than they do excited by their stress response. Those players who show a balanced or excited appraisal demonstrate no statistical difference in the pattern of play between the game conditions. Overall, the findings lend support to the notion that levels of athletic achievement, as well as specific performance, may be predictable - both accurately and meaningfully - from personality characteristics, provided that a sound hypothesis-driven approach is utilized (Aidman & Bekerman, 2001).

Some sport psychologists believe that personality data can be predictive of athletic success, while others believe that personality profiles cannot be used to predict athletic success. The most successful work on personality differences between successful and unsuccessful athlete has been conducted by Morgan. Based on a large body of research studying elite athletes, Morgan identified Iceberg Profile, a personality profile of successful athlete marked by low levels of tension, depression, anger, fatigue and confusion, but high levels of vigour (Wann, 1997).

2.2.3.7 Other related variables and personality

Expectancy research in sport focuses on performance cues (i.e. physical ability, effort) omitting the potential influence of personality cues (i.e. confidence) on expectations and failing to link expectations with performance. The purpose of Solomons' (2001) study was to examine the influence of various impression cues (performance and personality) on athlete performance. Head coaches completed the Expectancy Rating Scale to assess expectations of

physical ability, and both coaches and athletes completed Vealey's Trait Sport Confidence Inventory to assess athletic confidence levels. Multiple regression analyses revealed that coach evaluation of athlete confidence was the only significant predictor of performance. Levels of the three expectancy variables differed across sport type.

Rhodes et al. (2002) investigated the moderating influence of the five-factor model of personality (FFM) on the theory of planned behaviour (TPB) in the exercise domain. Although an analysis of all possible moderation effects was conducted, it was hypothesized that high extraversion (E) and conscientiousness (C) individuals would demonstrate significantly stronger relationship between intentions and exercise behavior than those low in E and C. Conversely, it was expected that high neuroticism (N) individuals would show a significantly weaker relationship between intention and exercise behaviour than those low in N. A total of 300 undergraduate students completed measures of the FFM, TPB, and a 2-week follow-up of exercise behaviour. Two-group structural equation models of the TPB were created using a median split for each personality trait. Overall, 5 significant moderating effects were found. Specifically, N was found to moderate the effect of subjective norm on intention. E also moderated the effects of subjective norm on intention as well as intention on behaviour. C moderated the effects of affective attitude on intention and intention on behaviour. The results generally support the possibility of personality being a moderator of the TPB but highlight the need for future research and replication.

Conducting an experimental study, Tattersfield (1975) summarised the findings of his study of the development of personality in 106 boys (aged 11-14 years) heavily engaged in a competitive swimming environment, one can say that the total personality profile did change during the experimental period and relative to a control group of non-competitive type boys the most pronounced

changes were in the direction of increased extroversion and decreased anxiety and a lower level of independence.

Manoj and Subramanyam (2000) carried out one investigation to find out the gender dominance on inertia, Activation, and stability, which were the components of personality. The sample consisted of 100 sports persons from different sports and games, taken from Kerala State (50 male and 50 females). The age of the subjects ranged from 21 years and above. The data were collected by using Mathew I.A.S. Rating Scale Questionnaires. The results indicate that there was no such significant difference in the analysis of the data. Investigation was done on dominance level of Inertia, Activation. Stability, Inertia + Activation, Inertia + Stability, and Activation + Stability. The data on stability dominance group was found that female sports person showed a higher degree of stability dominance. The data on Inertia +Activations dominance characters, no such significant difference was found between Sex and I.A.S, On Inerita+Sability dominant character a high significant difference was found between sex and between the variables I.A.S. On Activation + Stability female sports person showed higher degree in this linked dominance. Except the linked character of Inertia + Activation all the result showed the female sports persons were dominating higher than the male sports persons

They concluded as follows:

1. Analysis of data showed that there was a significant difference on male and female sport persons, inertia, activation and stability level on stability dominant group and also found that female sports person showed a higher degree of stability dominance.

The present conception views stability as stress tolerance, freedom to adjust and final happiness in different types of situation and act or not act or one

choose. So a sportsman with a great deal of stability has maximum stress tolerance. However he or she has also a very sensitive, discriminating nervous system. They respond to delicate things like incongruity of instruction, moral contractions and so on. They are aesthetic, philosophical and are capable of deep emotions. Though he is capable of adjusting to a variety of new situation uncongenial (Morally, esthetically and socially) situations cause stress in them and create state of intense and prolonged anxiety or deep depression. Unbearable prolonged contradictions can land him in schizophrenia.

2. Analysis of data on inertia + activation dominant characters, no such significant difference was found between sexes or between the inertia, activation and stability. Comparing this group with western psychological concept, it is a mixture of introversion and extroversion. In this analysis male and female sports person showed equally dominant character.

A men or women with a great degree of inertia is generally well adjusted when not exposed to stress, they are incapable of having deep emotions.

A man or woman with higher activation was found with a great deal of restlessness and ambition. They respond the stress with aggression. Their reactions are individualistic and purposive.

3. Analysis of data on inertia + stability dominant character, a high significant difference was found between, sexes and also between the variables (I.A.S).

The modern concept of introversion involve a mixture of inertia and stability difference found between the male and female sport persons showed a higher degree of this linked dominance.

- 4 Analysis of data on activation + stability dominant character, higher significant differences were found between the sexes and also between the variable (I.A.S.). The modern concept of extroversion involves a mixture of activation and stability. In this analysis it was crystal clear that male and female sports person showed higher degree of this linked dominance.
- 5 Except the linked charted inertia + activation all the three results of the analysis, showed female sports person were dominating highly in the other three characters.

The study of relationship between personality and sport performance is a dynamic component of sport psychology (Leunes and Nation, 2002). A psychological analysis of athlete will be incomplete without referring to personality.

2.2.3.8 Reviews on personality: an overview

Regarding the review of related literature on personality some conclusions can be drawn.

1. Research findings are rather equivocal on the issue whether the outstanding athlete possesses a personality profile or particular personality traits dissimilar to those displayed by the average athlete. In turn, whether the personality of the athlete change due to participation in sport is a question of equal importance.
2. The findings related to personality in sport is subjected to variation according to the differences in conceptualizations of personality, methodology, sample etc.

2.3 Emotional Intelligence

2.3.1 Emergence of Emotional Intelligence

The merging of emotion and intelligence as a cognitive ability under the caption of emotional intelligence (EI) was proposed by Peter Salovey and John Mayer (1990). It was defined as “ability to monitor one’s own and others feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions”. The concept of EI however, received popularity by Daniel Goleman in 1995.

Even though the term EI has received considerable attention recently, earlier psychologists and philosophers had already laid down the foundation. Thingujam (2002) quotes spinoza, Aristotle, and Ellis. In 1677, Spinoza said that both the emotion and the intellect together contribute to the ultimate cognitive tool. He talked about three levels of cognition (or knowledge), that is, emotional cognition, intellectual cognition, and a kind of intuition. Aristotle also stressed on what reason dictates when one gets angry with the right person to the proper extent at the right time. In 1962 Ellis, pointed out that human emotion and thinking are not separate processes, but that they significantly overlap and can never be viewed completely apart from each other.

Thingujam continues that Thorndike kept a special place for social intelligence away from other types of intelligence and defined it as “the ability to understand and manage men and women, boys and girls to act wisely in human relations”. As social intelligence was defined very broadly one can consider EI as a type of social intelligence, but the difference is that compared with social intelligence EI may be more clearly distinguished from general intelligence as involving the manipulation of emotions and emotional content.

Gardner (1983) talked about multiple intelligences including interpersonal intelligence and intra-personal intelligence. He conceptualized intra-personal intelligence as an ability to understand one's own emotion and interpersonal intelligence as an ability to know others' emotions and intentions.

Sternberg (1988) talked about triarchic theory of intelligence that consists of componential intelligence, experiential intelligence and contextual intelligence. The third component, contextual intelligence is very much overlapping with EI because it manages our ability to handle everyday life affairs in an efficient and practical way. The central ideas are our capacity to make adjustment to various contexts with a proper selection of contexts so that we can improve our environment in a better way to meet our needs. "Street smart or business sense" are the best words to express contextual intelligence- Without having high IQ one can have high contextual intelligence (Zimbardo & Gerring, 1996).

Considering the observations of various authors like Ellis, Mowrer, Wechsler, Gardner, Sternberg, Salovey and Mayer etc Thingujam (2002) concludes that it is by now no surprise to welcome a new construct of EI if we took minutely at the following points: 1) the inseparability of "human thinking and emotion" by Ellis, or emotion being considered as "higher form of intelligence" by Mowrer, 2) Wechsler's contention of including affective ability for measuring total intelligence; 3) the entry of intra-personal intelligence and interpersonal intelligence in multiple intelligence by Gardner 4) the inclusion of contextual intelligence in triarchic theory of intelligence by Sternberg 5) the several criticisms posed against social intelligence in terms of theoretical conceptualization by Salovey and Mayer. Precisely, the symbiotic nature of emotion and cognition are very much supported by the existing literature.

2.3.2 Emotional Intelligence: Different Models

Different psychologists tried to evolve models of emotional intelligence in order to define the same as a mixture of abilities and other personality traits. These models can be classified into two categories that are ability model and mixed model. Ability models of emotional intelligence focus on the interplay of emotions and intelligence while mixed models describe a compound conception of intelligence which includes mental abilities and other dispositions and traits.

While developing the research-based concept of emotional intelligence, Mayer et al. (1999) said that the field of cognition and affect provided some of the foundation for a new theory of emotional intelligence. He included many variables as emotional perception, emotional integration, understanding emotion, and management of emotion and measuring emotional intelligence in his overall description of emotional intelligence.

Mayer and Salovey proposed the ability model of emotional intelligence. They opine that emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and others emotions, to discriminate among them and to use this information to guide ones thinking and action. They proposed four broad components of emotional intelligence.

- 1) Perception, appraisal and expression of emotions: It includes identification of ones' and others emotions, ability to discriminate between accurate and inaccurate emotions and express them accurately.
- 2) Emotional facilitation of thinking: It embraces generating emotions as aids to judgment and memory, encouraging problem solving and facilitating, reasoning and creativity. It changes mood swings from pessimistic to optimistic etc.

- 3) Understanding, analyzing emotions and employing emotional knowledge: This includes the ability to label emotions and recognize relations such as relation between liking and loving, ability to interpret the emotions, their meaning, understand complex and simultaneous feelings of love and hate.
- 4) Reflective regulation of emotions: It helps in promoting emotional and intellectual growth. It is concerned with the ability to stay open to feelings, both pleasant and unpleasant, ability to detach from an emotion and ability to monitor and manage the emotions reflectively. It includes the selection of emotionally rewarding work, which enhances self-motivation.

This model predicts that emotionally intelligent individuals are more likely to have emotionally sensitive parenting, able to reframe emotions effectively, choose good emotional role models, able to communicate and discuss feelings and develop expert knowledge in a particular emotional area such as moral or ethical feeling or spiritual feelings etc.

Somewhat distinct from mental ability model is mixed model. In this emotional intelligence has been conceptualized as involving much more than ability of perceiving, assimilating, understanding and managing emotions. These alternative conceptions include not only emotion and intelligence but also motivation, non ability traits and global personal and social functioning (Goleman, 1995).

Goleman's (1995) model of emotional intelligence is an example of mixed model. He states that emotional intelligence will account for success at home, school and at work. Among youth, emotional intelligence will lead to less rudeness; more popularity imposed learning and better decisions. At work,

emotional intelligence will assist people in teamwork, cooperation and to work more effectively.

The mental ability model focuses on emotions themselves and their interactions with thoughts. The mixed model treats mental abilities and a variety of other characteristics such as motivation, state of consciousness and social activity as single entity. The model to be used entirely depends upon what has to be studied. Mixed model has been widely used to study various aspects of emotional intelligence. A comparison of three models by Mayer & Salovey, Bar-On, and Goleman are given in the table 2.1.

Table 2.1

Three competing models of emotional intelligence as composed by
Mayer et al. (1999)

Mayer & Salovey (1997)	Bar-On (1997)	Goleman (1995)
Overall Definition “Emotional intelligence is the set of abilities that account of how people’s emotional perception and understanding vary in their accuracy. More formally, we define emotional intelligence as the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and other”.	Overall Definition “Emotional intelligence is an array of non cognitive capabilities competences and skills that influence one’s ability to succeed in coping with environmental demands and pressure”.	Overall Definition “The abilities called here emotional intelligence, which include self-control, zeal and persistence and the ability to motivate oneself. “There is an old fashioned word for the body of skills that emotional intelligence represents, character”.
Major areas of skills and Specific examples	Major areas of skills and specific examples	Major areas of skills and specific examples

Perception and expression of emotion - Identifying and expressing emotions in one's physical states, feelings and thoughts - Identifying and expressing emotions in other people's artwork, languages etc.	Intra-personal Skills - Emotional self awareness - Assertiveness - Self Regard - Self Actualization - Independence	Knowing one's emotions - Recognizing a feeling as it happens - Monitoring feelings from moment to moment
Assimilating emotion in thought - Emotions prioritize thinking in productive ways. - Emotions generated are aid to judgment and memory.	Inter personal skills - Interpersonal Relationships - Social responsibility - Empathy	Management Emotions - Handling feelings so they are appropriate - Ability to soothe oneself - Ability to shake off rampant anxiety, gloom or irritability
Understanding and analysing emotions - Ability to label emotions including complex emotions and simultaneous feelings - Ability to understand relationships associated with shifts of emotion	Adaptability Scales - Problems solving - Reality testing - Flexibility	Motivating Oneself - Marshalling emotions in the service of a goal - Delay gratification and stifling impulsiveness - Being able to get in to flow state
Reflective regulations of Emotions - Ability to stay open to feelings - Ability to monitor and regulate emotions reflectively to promote emotional and intellectual growth	Stress-management Scales - Stress tolerance - Impulse Control	Recognizing Emotions in others - Emphatic awareness - Attunement to what others need or want
	General Mood - Happiness - Optimism	Handling relationship - Skill in managing emotions in other - Interacting smoothly with others

2.3.3 Some basic concepts related to emotional intelligence

A number of concepts like experiential intelligence, emotional efficacy, social intelligence, inter and intra-personal intelligence have provided the basis for the development of the EI concept. A brief discussion of these concepts may help in understanding the EI concept in its proper perspective and distinguish it from other related concepts.

2.3.3.1 Experiential Intelligence

Epstein (1991) persuasively argued that besides rational intelligence, there is a second kind of intelligence which is not measured by IQ tests and it is known as experiential intelligence. The rational mind learns by abstracting, analyzing, reasoning, etc., whereas the experiential mind learns directly from experience and operates by intellectual wisdom. The experiential mind is more closely connected to emotions than the rational mind and operates on the basis of past experiences. It is considered vital to the well-being of the individual because it automatically interprets what is going on, how one feels, and what should be done. The experiential mind influences everyday effectiveness and success by the way it orchestrates and, thus, enhances basic life skills.

2.3.3.2 Interpersonal Intelligence

This involves control of desires, recognizing and responding to other's thoughts and feelings, knowledge of rules and strategies to resolve conflicts, organizing oneself, and making group decisions. Rather than focusing on a single EI, Gardner (1993) referred to the capacities that deal with one's own feelings and those of others from two related but distinct intelligences: inter- and intra personal intelligences. Research indicated that the effectiveness of people who relate to and monitor and interpret the feelings and motivations of others is independent of their performance on IQ tests and other conventional measures of

cognitive and holistic achievement. The development of interpersonal intelligence depends upon social, contextual, cultural as well as biological factors.

2.3.3.3 Emotional Competence

This is related to the demonstration of self-efficacy in emotion eliciting social transactions (Saarni, 1997). Self-efficacy and emotion eliciting social interactions are considered central to the emotionally competent functioning of individuals (i.e., how-people respond emotionally, yet strategically and simultaneously apply their knowledge about emotions and motional expressiveness to their relationship with others). Self-efficacy is an individual's capacity and skill to achieve desired outcome.

Saarni (1997) integrated emotional competence with concepts such as wisdom, sympathy, self-control, fairness, and sense of reciprocity. An individual's moral disposition is related to his sense of emotional self-efficacy.

2.3.4 Family and the development of emotional intelligence

Family is viewed as the primary context in which children's emotional competencies are developed. Parents directly or indirectly influence children's reaction to or way of coping with emotionally evocative situations. The influence of parental expressiveness on children's ability to interpret and understand others' emotional reactions has been observed (Dodge, 1985). Further, parental expression of emotions like hostility towards the child, and anger is related to the development of social-emotional competencies of children as it shapes children's feelings about themselves and others (Eisenberg et al., 1997). It has also been demonstrated that parental practices and behaviors are linked to children's socio-emotional responses (Eisenberg & Fabes, 1994).

Recent conceptualization of parent child attachment endorses the view that children's emotionality and regulation to emotions are related to the quality of parent-child relationships. Attachment styles and relationships have been viewed as reflecting strategies for regulating emotion in inter personal relationships (Bridges & Grolnick, 1995).

Specific emotion related parental practices are associated with children's expression of appropriate emotion. Parental discouragement of the expression of emotion is related to deficits in understanding other's emotions and is linked with lower levels of social competence and peer acceptance (Saarni, 1997). In contrast, parental support and environment that afford opportunities to children influence emotional regulation. Thus relative to emotion regulation and social efficacy, it appears that factors within the family like warmth, responsiveness and empathy with the child's emotional experience contribute to the development of competent self-regulation.

2.3.5 Intelligence and emotional intelligence

Psychological thought in the main stream evinces an overwhelming tendency to construe and apply a tripartite division of mind comprising of cognition, affect and conation (Hilgard, 1980). Intelligence was used to characterize how well a person's cognitive functions excel. After a long popularity intelligence has started losing its ground for several reasons. Prominent among them is its failure to explain real life experiences (Sternberg et al., 1995). In a large share one's ultimate niche in society is determined by non intellectual factors (Gardner, 1993). The concept of emotional intelligence shows that to understand and appreciate intelligence in totality one needs to attend to the domain of personality, emotions and motivations.



General intelligence includes dozens of related groups of mental abilities. Most of the research in the twentieth century was related to verbal, spatial and related logical information processing (Carroll, 1993).

2.3.6 Development of emotional regulation

Losoya and Eisenberg(1998) have outlined some of the important variable involved in the development of emotion regulation. These include age, individual difference in emotionality and regulation, and agents of socialization (i.e., parents or primary caregivers). Regarding age, rudimentary abilities relevant to the regulation of emotion are present at birth or shortly thereafter. The developments of language and cognitive capacities broadens the child's ability to regulate emotions, emotionally drive behavior, as well as the emotion-eliciting context, individual differences in emotionality and regulation add a degree of complexity to the development of emotion regulation; these differences appear to influence the course of development by providing an intraindividual checkpoint for the likelihood of becoming over or under aroused in a given situation. Individual difference in emotionality and regulation also influence caregivers, which, in turn, result in caregiver behaviors that teach children about emotion and its regulation. An important question is the degree to which a mismatch, in terms of child temperamental tendencies (e.g., emotionality and reactivity) and caregivers coping skills is associated with emotional and behavioral regulation and dysregulation. Longitudinal data on the interaction of individual difference in emotionality and regulation, as well as the moderating effects of socialization, should yield exciting new insights into the development of children's ability to regulate emotions.

2.3.7 Cognition and emotion

In their article Scioli and Averill (1998) explain the conceptual relation between cognition and emotion. As used in ordinary language the concepts of

emotion and cognition have contrasting connotations. Cognition is concerned with how we come to know the world, dispassionately and objectively. A cognition may thus be judged true or false. Emotions, by contrast, are passionate and subjective, that is they are concerned with how a person evaluate the world in relation to his or her own goals and concerns. Thus, emotions such as anger, say, or joy are not typically judged true or false, but appropriate or inappropriate.

On two things most theorists agree: First, mental health implies an integration of psychological functions, just as physical health implies an integration of bodily functions, and second, in a rapidly changing social environment, emotional adaptability is an important as cognitive flexibility. The nature of emotional feelings, unconscious emotions, emotions and memory, emotional intelligence, and emotional creativity-these are some of the issues that lie at the interface between emotion and cognition, where problems of integration and adaptability are more acute.

How to help in the proper development of emotional intelligence? The following measures are suggested by Mangal (2003).

1. Try to help yourself and the youngsters develop the ability to understand feelings in the right manners both in oneself and others.
2. Do not give away to misgivings and misinterpretations of feelings in others. It leads to a hostility and bias. Remember that love always begets love, while suspicion, hatredness and aggressions are rewarded with similar emotions.
3. In all situations, self-awareness of the feelings and emotions are important. Try to teach the children and help yourself know what you feel at a particular time.

4. For understanding others and their feelings develop the trait of a good listener. People who have a high E.Q. (emotional quotient) also have a high score on empathy and empathy occurs through effective listening.
5. Try to do away with the wrong notion that thought is most appropriate when not clouded by emotions. Try to learn the integration of thoughts and emotions, heart and mind for appropriate behaviour at the right time. Therefore, do not try to suppress emotions (as every feeling has its value and significance); strike a balance between rational thought and emotions.
6. Teach the children and yourself that all emotions are healthy (because emotions unite the heart, mind and the body). Anger, fear, sadness, the recalled negative emotions are as healthy as peace, courage and joy. The important thing is to learn the art of expressing one's feelings or emotions in a desirable way at the desirable time in a desirable amount. In this connection, the remark of the Great Greek Philosopher Aristotle can be referred to as a guideline:

“Anyone can become angry - that is easy. But to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way - that is not easy”.
7. Try to practice and teach the children the art of managing the feelings and emotions as adequately as possible. This is especially important for the distressing emotions of fear, pain and anger.
8. Do not allow the emotions and feelings be obstacles in your path. Use them as a motivating agent or a force for achieving your goals.
9. Teach yourself and your children the lessons of empathy, i.e., developing a sense of what someone else is feeling.
10. Learn the methods of proper development of social skills for better communication and interpersonal relationship with others. Express your

feelings with an equal sense of attending and listening to other's feelings for the better management of relationships.

11. Try to devote more time and take efforts to develop not only the cognitive professional skills but also the affective skills for the development of emotional intelligence.
12. Last but not the least is to provide yourself a model or a companion for maintaining proper emotional bonds. If you have developed yourself as an emotionally intelligent individual, you may inspire or lead others to become so. However, it is not essential to be perfect or complete the guide others as patients, teachers or bosses. You just need to see what others need and the thereto meet their needs.

In spite of the claims of popular authors, Mayer and colleagues do not believe that emotional intelligence will prove to be twice as important as analytic intelligence in predicting success. What research does exist, however, suggests that emotional intelligence is likely to take its place along side other important psychological variables as an important predictor of performance at school, home and work. For example, higher emotional intelligence may predict psychological mindedness and reduced levels of problem behavior such as drug use and interpersonal violence. The development and understanding of intelligence requires number of years of careful scrutiny and research. The most widely used cognitive scales of intelligence, the Wechsler intelligence scales, are the product of 60 years of research. Moreover that research itself was initiated only after 40 years of earlier work on the clinical assessment of intelligence. The first 10 years of emotional intelligence research have been both frustrating and rewarding. Both the pace and quality of research in the area reflect the activities of a healthy field.

2.3.8 Emotional intelligence : An Indian view

Psychological processes are assumed to be culturally constituted and may be expected to vary with differences in cultural meanings and practices. Thus, emotions are understood as dependent on cognitive appraisals, experiences and are necessarily a culturally grounded process.

Analyzing a Sanskrit-English dictionary (Williams, 1989) with a view to identifying various words in Sanskrit related to emotion, nearly 350 such words were found. A further analysis revealed that (a) for each emotion related word in English, there are multiple Sanskrit terms, (b) there are words which show gender specificity in use of emotion, (c) majority of the words expressing emotions are concerned with maintaining harmony and well-being in society, and (d) distress is a hypercognized emotion with 45 lexical terms and tolerance is a hypocognized emotion with only 2 lexical terms. Thus, individualistic cultures emphasize and elaborate the experience of emotions like pride and anger that have the individual as the referent. In contrast, groups which highlight the importance of relations to others and inter subjectivity, emphasize and elaborate the experience of emotions like empathy and shame.

Research (Agarwal & Misra, 1986) has demonstrated that social concern is one of the salient aspects of achievement concerns among Indians. Also, Indians often treat individual inclination as consistent with duty or 'dharma'. The Indian tradition has, from time to time and through different systems of beliefs and practices, emphasized certain independent but inter related concepts with reference to stress and suffering. The important ones are detachment impulse control, and transcendence (Palsane & Lam, 1996). The principle of detachment refers to viewing pleasure as well as suffering with equanimity. Not being too involved in objects of pleasure, and not being too concerned about avoidance of suffering is seen as part of one's essential nature. This helps to minimize the

emotional impact of success and failure. This is the basis for emotional stability, a quality highly valued in modern mental health science.

The concept of impulse control is related to the theme of desires. The concept of 'jitendriya' refers to a person who is able to manage and regulate his emotions. Such a person has full control over his impulses and actions. Similarly, the notion of 'nishkam karma' refers to the quality of nonattachment, which is emotional self-regulation. The tradition of yoga views regulation of mental activities as significant ('yogaschitta vritinirodhan') for sound health. Yogic and religious practices such as 'vratas'(ordinances) like fasting and abstentions help one to inculcate this kind of self-discipline. The 'Bhagavadgita' combines these virtues of detachment and impulse control in a personality type called 'sthitaprajna' implying "one whose intellect is stable". There is empirical evidence to support this view (Naidu, 1986). Transcendence means consideration of something beyond oneself, of other people, other things, and the world. Such thinking takes one away from selfishness in the first place and is, therefore, consistent with the course of civilizations, development from one's own self to a larger self and also with the overall principles of 'dharma'.

Bharata's Sanskrit text 'natyasatra' centered around the concept of 'rasa' i.e., 'aesthetic relish' or relishable quality inherent in a work or presentation of art. Bharata proposed eight major aesthetic moods: love ('sringara'), comic ('hasya'), pathos ('karuna'), furious ('raudra'), heroic ('vira'), horror (bhayankar), odious ('bibhatsa'), and marvelous ('adbhuta'). The idea of the ninth emotion, i.e., devotion (bhakti) is widely accepted and is entrenched in the Indian culture. The Indian approach to emotion differs in its emphasis on the distinctly human features cognitive, aesthetic, and spiritual.

Keeping in view the distinctive characteristics of the Indian cultural context Sudarsan and Sasikumar (2002) propose a culturally appropriate model

of emotional intelligence, includes factors like social sensitivity, time orientation, pro-social values, action tendencies, and affective states,

1. Social Sensitivity: This refers to the quality of relationship between individuals, and between individuals and groups. It also includes the way people relate to all other beings. This social sensitivity may be expressed in different ways, such as:
 - a. Showing respect for significant others, for instance: parents, elders, and all beings.
 - b. Pro-social activities including helping, cooperating, comforting, showing affection, empathizing, being sincere in relationships, etc.
 - c. Expressing and experiencing affection: This refers to the ability to connect with people and to be able to understand their emotions. It also includes understanding and expressing emotions towards equal, superior, subordinate in day-to-day interaction and its implication for future.
 - d. Building social support for oneself: This refers to the effectiveness with which one can organize others in support of oneself. It requires understanding the minds of others and influencing them in one's favor.
 - e. Expression and control of negative emotions such as anger, aggressiveness, unhappiness. Jealousy, greed, and intolerance.
2. Time Orientation: This dimension refers to the awareness of the significance of time. The importance of time cannot be over emphasized in Indian thinking which assumes that any behavior has antecedents and consequences. Good behavior leads to good consequences and bad

behavior leads to bad consequences. The importance of time is reflected in emotional intelligence in relation to the following:

- a. The extent to which an individual is mindful of the future consequences of behavior.
- b. The extent to which an individual remains prepared to meet future contingencies
- c. The extent to which an individual is able to regulate and control the self and is thus able to monitor progress in his life course.

In relation to time, certain emotional ups and downs are experienced while constructing the self- emotional learning in the Indian context needs to be viewed as a lifelong process of a personal journey (looking inward) towards the discovery of the true self. This process is marked by beliefs and practices about 'yoga', 'karma', 'dharma', 'vratas', caring, and benevolence. Though not empirically tested, but the existence of these cannot be denied since they have found expression in literature, folklore, popular songs, idioms, and other Indian works.

3. Pro-social Values: In the western context EI is chiefly concerned with the maximization of self-interest. However in collectivist societies like India, group welfare receives priority over the self. As a result, two different types of values are given prominence in various societies. In the Indian context, values like patience, affection, tolerance, kindness, and endurance are closer to the concept of emotional intelligence.
4. Action Tendencies: EI does not exist in a vacuum; it is related to the competence with which an individual performs a task. Competencies such

as persistence, dedication, discipline, punctuality, and sense of time are closely related to the notion of EI in the Indian context.

5. Affective States: EI is closely related to the quality of emotional life of people. It is concerned with these emotions which facilitate one's life course. Thus, an emotionally intelligent person would be happy, contented, creative, open to exposure, optimistic, etc.

Emotional intelligence involves the ability to deal with feelings, the ability to communicate. The lack of these skills has far reaching impact and results in unhappiness and inability to form positive relationships. Recent findings have identified emotional intelligence as the single most important factor predicting success and happiness in life (Sudarsan & Sasikumar2002).

2.3.9 Emotion and perspective in sport

Sport has always been recognized passionate phenomenon requiring tremendous emotional investment and focus to excel. Learning to manage emotions and perspective in such passionate demanding conditions is what makes sport such a special territory for character development.

Although consensus has not been reached on an exact definition of emotion, three components of emotion have been identified: subjective feeling, physiological response, and overt behaviour. Vallerand (1983) identified seven basic emotions (primary affects): (a) happiness, (b) surprise, (c) fear, (d) anger, (e) sadness, (f) disgust/contempt, and (g) interest. All others are said to be derivatives of these. While there is some debate over whether the list is complete, these seven were chosen by virtue of their presence in every human culture. This universality implies innateness which, in turn, suggests that these seven emotions serve particular functions.

By recognizing how we are affected by emotions, as well as the thoughts and events that lead to them, we can prepare for their onset. This preparation can include means of directing the energy productively, changing emotions through different appraisal, and reducing the intensity of disruptive emotions, (Botterill and Brown, 2002)

In examining the functions, some important disclaimers are noted by Botterill and Brown (2002). First, some obvious differences exist between our culture and that of more primitive man. For example, the anger response sends blood to the hands, thus facilitating the grasping of a weapon or stone necessary for combat. No such response is required or appropriate to deal with a frustrating opponent, coach, or teammate. However, that impulse still exists and needs to be controlled or manifested in a socially acceptable manner. Another example of this is in the fear response. Most of our fear comes in response to symbolic threats, requiring that the individual neither fight nor flee. As such, that impulse serves little purpose unless the energy accompanying it is directed into the competition. For example, a swimmer who experiences fear in response to stiff competition in her race can direct that energy into a stronger swim.

A second disclaimer emerges with the consideration of this question; if emotions are functional, why should we seek to control or redirect them? One does not have to look far to find examples of the negative influence of emotion. In light of the subjective nature of emotion, one can assume that certain aspects of emotional coping are learned or constructed by the individual. It follows that one could learn or create ineffective responses to emotion. It may therefore be appropriate to take steps which will bring emotional responses into line with one's goals and best interests. This notion of appropriate emotional response ties closely to Goleman's (1995) concept of emotional intelligence

According to Botterill and Brown, (2002) our emotions can be both facilitating and debilitating. Many people fail to maximize and approximately direct the energy that emotion provides. Many more make futile attempts to shut out their emotions. It is important that we respect the power that our emotions can have on us, but equally important that we recognize the effects that we can have on them. Emotions are a vital part of the human experience and should neither be feared nor ignored. Those who are passionate and focused normally come closest to their health and performance potential.

2.3.9.1 Emotional intelligence and athletic excellence

In a discussion on the importance of emotional intelligence in sport, Rajitha (2004) has described sport as a creative expression of intelligence. McCann (2002) explains three elements of emotional intelligence proposed by Goleman that are particularly important for sport:

Impulse control and the ability to delay gratification

There are athletes, who couldn't resist the high-risk, high reward move, even when a low-risk, low-reward move was clearly the better choice? Examples of this kind of behavior include the runner who can't stay in the pack and always tries to win from the front, the basketball player who drives to the basket no matter how many defenders clog the lane, or the wrestler who either wins or (more frequently) loses spectacularly. The ability to resist an impulse to wait for the correct moment to attack can mean the difference between winning and losing.

Over the long term, the ability to delay gratification can be critical for an athlete to make it to the highest level. For example, several Olympic coaches have described specific athletes who "have never put in the time to learn a skill correctly, and will never be an international champion". These athletes do the

sport skill “almost right”, and begin to use the skill in competition, hindering their development. McCann (2002) reports that one foreign-national, Olympic coach was shocked by the many American athletes’ seeming inability to work on skills, “They always want to play games, never work on the basics”. Emotionally intelligent athletes see the big picture, delay gratification and work regularly on the basics.

Regulating moods to help, not interfere

Perhaps the most frustrating type of athletes to coach is those with tremendous talent and tremendous anxiety during competitions; the best practice athletes who turn into the worst competition athletes. In addition to anxiety, anger and depression are moods that can interfere with the ability of an athlete to think and act effectively. An extreme form of this interference takes place during what Goleman calls an “Emotional Hijacking.” During these emotional events, the amygdala, a part of the brain which acts as an emotional alarm center, takes over and dramatically lowers the ability of an athlete to function at a high level. Examples of emotional hijackings in sports are numerous: a star basketball player going into a violent rage and being thrown out of a game; the archer who realizes he will win with one more bull’s eye in the 10 ring, only to see his heart rate skyrocket causing him to shoot an uncharacteristic eight; or sudden and powerful fear of crashing that destroys a ski racer’s ability to visualize the correct line on a race hill. In each of these cases, an elite athlete’s normal emotional control techniques overwhelmed or “hijacked” by the amygdala’s engagement of a host of “fight or flight” responses. Athletes (and coaches) who have been emotionally hijacked feel completely in the grip of their emotions at that time.

Conversely, emotionally intelligent athletes are quite familiar with anxiety, fear, and anger, but they use that anxiety and arousal to increase

productive focus, compartmentalize fear so that it doesn't prevent action and turn anger into motivation, intensity, and controlled energy.

Remaining optimistic and confident despite setbacks

Some athletes say that it takes five strong competition performances to build their confidence, but only one single mistake in a competition to take it away.

Contrast that type of fragile confidence with an athlete who seems to have a bottomless pit of confidence in her ability to overcome any challenge. Optimism, or the expectation that things will work out, is a powerful predictor of behavior. Goleman cites work by Martin Seligman, who has studied the power of optimism in many areas of life. One study gave elite swimmers false feedback about their training performances (swimmers were given false [slower] times by their coach in a time trial), and recorded how they performed in the next time trial. One of the swimmers in the study was Olympian Matt Biondi, an optimist, who responded with an even faster swim. Other swimmers, who had tested as more pessimistic, responded by swimming slower after the false negative feedback. This optimism served Biondi well later that year in the 1988 Olympic Games, when he narrowly lost his first two races but came back to win five gold medals.

2.3.9.2 Modifying athlete's emotional intelligence

Many coaches who were former athletes are fans of sport psychology because the concepts help explain issues that they had in their own athletic career. They know that developing sport psychology skills can help reduce the amount of time athletes must spend learning how to perform at the highest level. There are many techniques used to enhance sport performance (Rajitha,2005).

In many ways, sport psychology interventions work by increasing an athlete's emotional intelligence.

A view of human nature that ignores the power of emotions is sadly short sighted. The very name, 'Homo sapiens', the thinking species, is misleading in the light of the new appreciation and vision of the place of emotions in our lives that science now offers. As we all know from experience, when it comes to shaping our decisions and our actions, feeling counts every bit as much – and often more than thought. We have gone too far in emphasising the value and the import of the purely rational – of what IQ measures in human life. For better or worse, intelligence can come to nothing when the emotions hold sway (Goleman, 1995).

Goleman narrates five major aspects of Emotional Intelligence such as self-awareness, self-regulation, motivation, empathy and social skills. Of course, people differ in their abilities in each of those domains; Some of us may be quiet adept at handling, say, our own anxiety but relatively inept at soothing someone else's upsets. The underlying basis for our level of ability is, no doubt, neural, but as we see the brain is remarkably plastic constantly learning lapses in emotional skills can be remedied; to a great extent each of these domains represents a body of habit and response that, with the right effort can be improved on.

Self-awareness is fundamental to psychological insight; this is the faculty that much of Psychotherapy means to strengthen emotions that simmer beneath the threshold of awareness can have a powerful impact on how we perceive and react, even though we have no idea they are at work. But once the reaction is brought into awareness – once it registers in the context – one can evaluate things anew, decide to shrug off the feelings left earlier in the day, and change one's

outlook and mood. In this way emotional self-awareness is the building block of the next fundamental of emotional intelligence; self-regulation.

Commenting on 'self-regulation' Goleman says downs as well as ups spice life, but need to be in balance in the Calculus of the heart it is the ratio of positive to negative emotions that determines the sense of well-being – at least that is the verdict from studies of mood in which hundreds of men and women how carried beepers that remained than at random times to record their emotions at that moment. It is not that people need to avoid unpleasant feelings to feel content, but rather that stormy feelings not go unchecked, displacing all pleasant moods. People who have strong episodes of anger or depression can still feel a sense of well being if they have a counter veiling set of equally joyous or happy times.

Goleman continues, channelling emotions toward a productive end is a master aptitude whether it be in controlling impulse and putting off gratification regulating our mood so they facilitate rather than impede thinking, motivating ourselves to persist and to try, try again in the face of set backs, or finding ways to enter flow and so perform more effectively—all bespeak the power of emotion to guide effective effort.

Empathy builds on self-awareness; the more open we are to our own emotions, the more skilled we will be in reading feelings. The capacity – the ability to know how another feels – comes into play in a vast array of life arenas. The absence of empathy is also telling its lack is seen in criminal psychopaths, rapist, and child molesters. People's emotions are rarely put into words; for more often they are expressed through other cues. The key to intuiting another's feelings is in the ability to read non-verbal channels.

Social skills are the stuff of interpersonal polish, the necessary ingredients for charm, social success, even charisma. Those who are adept in social intelligence can connect with people quite smoothly, be astute in reading their reactions and feelings, lead and organise, and handle the disputes that are bound to flare up in any human activity. These interpersonal abilities built on other emotional intelligences. A healthier pattern, of course, is to balance being true to oneself with social skills.

2.3.10 Empirical studies

2.3.10.1 Intelligence and emotional intelligence

Many investigators have searched the nature of relationship between general intelligence and emotional intelligence. One of the theoretical claims made regarding the concept of emotional intelligence is that it concerns a range of human abilities which are independent of the more familiar concept of intellectual ability (Derksen et al., 2002).

Emotional intelligence is an increasingly popular consulting tool. According to popular opinion and work place testimonials, emotional intelligence increases performance and productivity; however, there has been a general lack of independent, systematic analysis substantiating that claim. The authors, Lam, and Kirby (2002) investigated whether emotional intelligence would account for increases in individual cognitive – based performance over and above the level attributable to traditional general intelligence. The authors measured emotional intelligence with the Multi factor Emotional Intelligence Scale (MEIS). As measured by the MEIS, overall emotional intelligence is a composite of the three distinct emotional reasoning abilities: perceive, understanding, and regulating emotions. Although further psychometric analysis of the MEIS is warranted, it was found that overall emotional intelligence,

emotional perception, emotional regulation uniquely explained individuals' cognitive – based performance over and beyond the level attributable to general intelligence.

In another study, individual differences in the ability to connect thoughts to emotions were studied with 321 participants who read the writings of a target group and guessed the emotions of targets. Findings were interpreted to mean that same forms of emotional problem solving require emotional openness as well as general intelligence (Mayer & Geher, 1996).

Goleman (1995) comments on the relationship among IQ and emotional intelligence that they are not opposing competencies, but rather separate ones. He adds one psychology's open secret is the relative inability of grades, IQ, or SAT scores, despite their popular mystic, to predict unerringly who will succeed in life. He concludes that the academic intelligence has little to do with emotional life. Somewhat similar idea has been echoed in a by Zee et al. (2002). They examined the relationship of self and other ratings of emotional intelligence with academic intelligence and personality as well as the incremental validity of emotional intelligence beyond academic intelligence and personality in predicting academic and social success. Little evidence was found for a relationship between emotional and academic intelligence. Academic intelligence was low and inconsistently related to emotional intelligence, revealing both negative and positive interrelations.

2.3.10.2 Emotional awareness

Barrett et al. (2002), has examined sex differences in emotional awareness. Female participants from 7 different samples, ranging in age, scholastic performance, socio-economic status and culture scored higher on a performance test of emotional awareness than did male participants. Women

consistently displayed more complexity and differentiation in their articulations of emotional experiences than did men, even when the effect of verbal intelligence was controlled. Together the findings suggest that sex difference in display of emotional awareness is a stable, highly generalisable effect.

To further refine the concept of emotional intelligence, Bernet and Michael (1996) developed the Style in the perception of Affect Scale (SPAS) to measure skills in the integrated, rapid and effortless awareness of changes in body feelings that constitute the prompts for emotions. Without this skill, responses tend to be delayed and inappropriate. Analysis shows that this style of perceiving feelings correlates highly with mental health, contentment, creativity and personal warmth. It is theorised that this style, by utilising the subject's feeling awareness of the subtleties in the communications and responses of other persons, is the foundation also for empathy and social intelligence which are qualities often grouped with emotional intelligence.

2.3.10.3 Self-regulation

Keeping our distressing emotions in check is the key to emotional well being. Indeed, self-regulation is one of the major aspects of Goleman's theory emotional intelligence. Slaski and Cartright (2002) investigated the relationship between a measure of EQ, subjective stress, distress, quality of work in life and management performance. Significant correlations in the expected directions were found indicating that managers who scored higher in EQ suffered less subjective stress, experienced better health and well-being and demonstrated better management performance. San - Fu Kao concluded his study suggesting that goal difficulty is a good way in which to analyze high Jumper's self regulation in competition. The future researches need to understand the evaluation systems the use of longitudinal design to examine athlete's self-regulation.

2.3.10.4 Motivation / allied variables and emotional intelligence

Terms like self-efficacy, optimism and hope have special importance when discussing emotional intelligence as Goleman does it under the topic of motivation. Luthans (2002) tries to bring a positive approach to organisational behaviour. Although the importance of positive feelings has been recognised through the years in the academic organisational behaviour and the popular literature, both management scholars and practitioners have arguably too often taken a negative perspective trying to fix what is wrong with managers and employees and concentrating on weakness. Luthans hopes this line of thought in Organisational Behaviour will be capable of contributing to performance improvement in today's work place.

Lang (2003) says that emotions are organized around two basic motivational systems, appetitive and defensive, that evolved from primitive neural circuits in the mammalian brain. The appetitive system is keyed for approach behaviour, founded on the preservative, sexual, and nurturant reflexes that underlie pleasant affects; the defense system is keyed for withdrawal, founded on protective and escape reflexes that underlie unpleasant affects. Both systems control attentional processing. With greater cue proximity (e.g. predator prey imminence), neural motor centers supercede, determining overt defensive or consummatory action. In humans, these systems determine affective expression, evaluation behaviour, and physiological responses that can be related to specific functional changes in the brain. This theoretical approach is illustrated with psycho-physiological and brain imagery studies in which human subjects respond to emotional picture stimuli.

The importance of emotion in sport and human performance seems beyond dispute. At every stage of engagement, sport selection, training, and competition, emotional and motivational factors contribute massively to speed,

strength, endurance, and degree of acquired skill. Emotional reactions contribute both positively and negatively to an athlete's performance - smoothing or disrupting motor sequences, distracting or focusing attention-in ways that are still poorly understood. Few would disagree that attitude and affective evaluation are critical to both competitive success and defeat.

The theoretical view presented by Lang (2003) is based on data from diverse disciplines-animal behaviour, neuroscience, and psychophysiology. It is proposed that the fundamentals of emotional expression are mediated by motivational centers in the brain that are structurally the same across mammalian species. Further more, the cortical, autonomic, and somatic responses measured in emotional perception are held to be similar to those that occur in less evolved animals when they stop, look and listen, attending to stimuli in the environment that signal danger, convey social meaning, or represent incentives to appetite. Thus, human emotions share an evolutionary link to primitive neural systems (defensive and appetitive) that function to ensure the survival of individuals and species.

With a highly evolved cortex and the addition of language and the capacity for other complex cognition, human emotional expression is complex and varied. Nevertheless, motivationally meaningful stimuli prompt a pattern of reflect change, somatic and autonomic, that parallels the reactions of other organisms. This phenomenon was illustrated by studies involving psycho physiological response of human participants to emotionally evocative pictures. Lang (2003) concluded that affect and motivation are seen to modulate human performance.

The sample of Bush and Salmala's, 2003 study included 10 athletes having won at least two Olympic gold medals or two World championship titles, or a combination of both(six women and four men). They were aged between 19 and

36 years. Both team & individual sports were solicited. All of the participants were interviewed. Using in-depth, open-ended and semi-structured approach. It can be concluded from this study that several factors were perceived to be important in the development and maintenance of expert performance, one of which was enjoying in the process of performance rather than focusing on end results. this phenomena is denoted as 'flow experience' as Goleman(1995).

2.3.10.5 Self efficacy

Researcher's attention has been recently focused on optimism that is an interesting personality facet related to performance. Both optimism and self-efficacy are personality characteristics, which are related to a person's expectations. A study on the sample of 153 athletes of artistic and rhythmic gymnastics aged 11 to 14 years revealed that there exists significant positive correlation between optimism and self-efficacy while pessimism was negatively related to self-efficacy. Regarding performance, pessimism was significantly and negatively related to performance. Augmentation of self-efficacy related to increase in performance. The regression analysis demonstrated that self-efficacy alone significantly predicts performance of artistic and rhythmic gymnastics (Daroglon et al.2001).

Wise and Trunnell (2001) examined the influence of different sources of efficacy information on self-efficacy strength. Forty-eight women ranging from 18 to 40 years of age were recruited from a university population and randomly assigned to one of six groups. Each group received three sources of bench-press efficacy information (performance accomplishment, model, verbal message) presented in a different sequence. Bench-press efficacy strength was measured after each source of efficacy information. Results indicated that a performance accomplishment led to significantly stronger bench-press efficacy than did observation of a model, which in turn was more effective in strengthening

efficacy than was hearing a verbal message. Second, performance accomplishment strengthened bench-press efficacy even when it followed one or both of the other sources of efficacy information. Finally, a verbal persuasion message was most effective in strengthening efficacy when it followed a performance accomplishment.

Previous research has established that happy and sad moods can affect persistence and success on a cognitive task, with happiness leading to higher performance and self-efficacy. Two experiments by Kavanagh and Hansfeld (1986) examined whether happiness also produces increased performance on a physical task and tested whether self-efficacy mediated the results. When mood inductions covered the full range from happy to sad, mood did influence physical performance. However, evidence regarding self-efficacy was equivocal. Efficacy for the performed task was unaffected by mood, although it remained a good predictor of performance. Since mood did alter efficacy for a non performed but more familiar task, inconsistent efficacy results could reflect task differences. The findings offer prospects for the use of mood inductions in practical sporting situations.

Jackson and Roberts (1992) study investigated relationships among peak performance, flow, goal-orientation, and perceived ability in an attempt to ascertain possible conceptual bases to peak performance. Two hundred collegiate athletes answered a questionnaire that assessed mastery and competitive goal orientations, perceived ability, flow, and experience in best and worst competitive performances. It was hypothesized that the psychological process of flow underlies peak performance and associated with a mastery oriented focus and high perceived ability. These predicted relationships were supported by both quantitative and qualitative analyses. Analysis of athletes' best performances indicated a total focus on performance, and other characteristics of flow were key

to the perception of a superior state of functioning. In contrast, over concern with the outcome, reflecting a competitive orientation was often associated with athletes' worst performances. These associations suggest that investigating positive performance states from a motivational standpoint may lead to greater understanding of the underlying conceptual bases of peak athletic performance.

In tune with the findings Robert and Jackson(1992) offer certain suggestion for improving sport performance. Several implications for how athletes' competition and how they focus during competition can be drawn from the of this study.

1. The distinction between mastery and competitive goals should be made clear to athletes, as well as the influence that their goal orientation can have on competition focus. Athletes should be encouraged to focus on mastery-oriented goals during performance, since these goals are related to what the athlete actually has to do and are goals the athlete has more control over. The findings from this study suggest that a mastery orientation is related to flow and performing well.
2. A competitive orientation was associated with poor performance in this study. However, it was an outcome focus during performance that was detrimental, not an orientation toward competitive or outcome goals in general. Therefore it seems to be the timing of goal orientation that is critical, not whether one is mastery or competitively oriented in general. As the time to compete draws near, it is suggested that focus becomes directed onto the task, of performing, that is a mastery orientation should be favoured at this time.
3. High perceived ability is related to flow and to athletes' best performances. Therefore, confidence building techniques and strategies to

help an athlete believe in himself or herself at the time of competition should help the athlete perform to his or her potential and make it more likely that a flow can be achieved.

4. A fundamental characteristic of flow states is that there is a perceived balance between the challenges and one's skills in a situation. Therefore athletes should be placed in situations in which they can find this balance. If it is not possible to change the objective context, athletes should be encouraged to redefine the challenges of the situation (e.g. set personal goals) so that they may approach the competition with confidence.

Hanin (2001) is of the opinion that multiple emotion variables can better predict the task involvement conceptualized as one of the important components of the performance process. More over, optimal emotions affected the quality (especially the pleasant emotions) and magnitude (especially the unpleasant emotions) of players' task involvement. Finally, optimal task involvement affected individual and team performance outcomes.

In recent years, achievement motivation theorists have focused on the achievement goals approach in understanding the role of psychological process underlying a variety of cognitive, affective and behavioural outcomes. This approach has also led to the investigation of the antecedents of goal adoption. For example, Dweck and Weggett proposed a model in which the 'theories of intelligence' people hold create different goals in the academic domain. Specifically, they differentiated two such beliefs. Entity theorists view intelligence as stable and fixed while incremental theorists view intelligence as relatively changeable or malleable. It was suggested that entity theorists are more likely to adopt more performance goals as a mean to demonstrate or to compare their intelligence to others and incremental theorists are more likely to adopt learning goals to improve or develop their intelligence. The cognitive,

affective and behavioural outcomes of incremental theorists are hypothesised to be motivationally adaptive when faced with set backs regardless of the levels of perceived ability. If perceived ability is low, entity theorists are likely to exhibit maladaptive behaviour such as drop-out or helplessness in the face of failure and negative affect such as anxiety.

A study on 123 secondary school students supported the casual link between conceptions of sport ability and goals. The study established that implicit theories are more pronounced when individuals are faced with setbacks and view failure as a threat to self-esteem. The product of entity beliefs with unsuccessful performance may lead individuals to withdraw effort, give up learning opportunities or experience helplessness. The implication for practitioners such as physical educators, coaches, and exercise promoters is that in addition to interviewing on achievement goals, attempts to cultivate incremental beliefs of sport ability may also be fruitful in creating adaptive motivational behaviour.

The purpose of the study was to describe the perceptions of coaching concepts of professional soccer coaches in Japan taking into account their coaching philosophy in relation to deliberate practice. The study found significant agreement between coaches' perceptions of the concepts on how they evaluated their coaching activities in relation to performance enhancement of the soccer players and how the role of deliberate practice affects the development of expertise in Japanese soccer. The strong relationship between play, work, and practice indicates that coaches direct players to commit to deliberate practice as a way of overcoming the three constraints for talent development: motivation, effort, and resources.

2.3.10.6 Empathy/social skills

One aspect of emotional intelligence – empathy and social skills have been examined theoretically by Bernet and Michael (1996). They contended that the subject's feeling, awareness of the subtleties in the communications and the responses of the person, is the foundation for empathy and social intelligence.

Examining the link between emotional intelligence and interpersonal relations, Schutte et al. (2001) was able to find positive correlation between emotional intelligence and social skills as well as with empathic perspective taking and self-monitoring in social situations.

Social intelligence appears to play a principal role in leadership, conclude Kobe et al. (2001) by analysing self reported leadership experiences in relation to social and emotional intelligence.

Karen and Sandy (2001) gathered evidence of problems in social skills through anecdotal records and observational checklist completed for 39 students. Analysis of probable cause data revealed that students demonstrated lack of emotional intelligence that inhibited the development of social competence.

Nykanen (2001) comments on athletes-coach interpersonal relationship. A task-oriented climate is more favourable to create enjoyment, enhance performance and creating self-confidence in the athlete. For a coach this is important to know, when he/she is fostering and for developing an athlete to be a talent, but also to enjoy his/her sport.

Conducting a series of 7 studies, Schutte et.al. (2001) examined the link between emotional intelligence and interpersonal relations. In Studies 1 and 2 the participants with higher scores for emotional intelligence had higher scores for empathic perspective taking and self-monitoring in social situations. In study

3, the participants with higher scores for emotional intelligence had higher scores for social skills. In Study 4, the participants with higher scores for emotional intelligence displayed more cooperative responses toward partners. In study 5, the participants with higher scores for emotional intelligence had higher scores for close and affectionate relationships. In Study 6, the participants scores for marital satisfaction were higher when they rated their marital partners higher for emotional intelligence. In Study 7, the participants anticipated greater satisfaction in relationships with partners described as having emotional intelligence.

Srivastava and Bharamanaikar (2004) examined the relationship of emotional intelligence with leadership effectiveness, success, and job satisfaction. The data were collected from 291 Indian army officers using a structured interview schedule. The results showed the emotional intelligence significantly correlated with transformational leadership and success, but not with job satisfaction. Emotional intelligence also differed across age but not across rank or length of service. It seems that the top management and policy makers should use EI to identify and develop effective leaders. in tune with the authors suggestion, it can be said that coaches may be benefited by assessing the emotional intelligence of players during the selection of team captains.

2.3.10.7 Emotional intelligence, intelligence, personality and psychological well-being

Seghal's (1999) study attempted to investigate relationships among EQ (based on Goleman's concept, intelligence, psychological well-being and Eysenckian personality dimensions. The results showed a moderate significant positive correlation between EQ & IQ dimensions. Psychological well being also showed high significant positive correlation with EQ. However, none of the Eysenckian personality dimensions was related to EQ. These latter findings seen

contrary to other researches. Most of previous researches have linked personality with emotional experiences, (Izard et al. 1998). Theoretically one would have expected a positive correlation between Extraversion & EQ and negative correlations between Neuroticism, Psychoticism and EQ. However Israeli psychologist, Reuven Bar-On (1966) who made the first commercially available test to measure 'EQ' defined emotional intelligence as 'capabilities', competencies and skills that influence one's ability in succeed in coping with environmental demands and pressures which directly affect one's overall 'Psychological Well-Being'. As proposed by Goleman (1996) and Reuven Bar-On (1996), EQ was related positively with Psychological Well-Being among adolescents.

Seghal proposes that concept of EQ can go a long way in being used as an index of well-being, mental health and it can be advocated that this dimension of Emotional Intelligence may serve as a useful screening device to identify intelligent, potentially successful, psychologically and mentally healthy individuals.

A study by Verma and Alka (2003) aimed to examine the emotional intelligence among college students and their relationship to their general well being. Two extreme groups were drawn on the basis of scores on emotional intelligence measure. High and low scorer on emotional intelligence (male and female separately) were further compared regarding their general well being. High and low group differed significantly on their general well being. The male and female students, who scored higher on emotional intelligence scored significantly higher for general well being.

2.3.10.8 Emotional Maturity, Emotional expression and Emotional Quotient

Some authors have tried to understand emotional quotient as a ratio between emotional age and chronological age as in case of intelligence quotient. For example, Chauhan and Tithi(2003) aimed to find out the Emotional Quotient among adolescents. The sample consisted of 120 male and female adolescents (both of pre and post adolescence stage) who were randomly assigned to all the experimental groups. Emotional Maturity scale and a self-prepared emotional expression scale were administered to the sample of adolescents. The results indicate the post adolescent males have higher emotional maturity than females and the stages of adolescence play a significant role upon emotional maturity. With regard to the emotional expression, it was found that post adolescents have greater skill for emotional expression than the pre adolescents. Females have higher skill for emotional expression than their male counterparts and both the stages of adolescence and type of gender play a significant role in determining the skill for emotional expression. The study reveals that post-adolescents possess a higher degree of Emotional Quotient than their male counterparts. The findings envisage the rationale to channelize emotional expression skills of adolescents for their effective mental health and personality development in the twenty-first century.

2.3.10.9 Other related variables of emotional intelligence

Singhal et al. (2003) examined the affect of anxiety upon emotional competence of school students of different educational boards. The sample consisted of 120 students who were selected randomly- Comprehensive Anxiety Test and Emotional Competence Scale were used to collect data. Out of which 60 students were selected from schools affiliated to U.P. board and other 60 from schools affiliated to I.C.S.E. board. A 2 x 3 factorial design was used. Results

indicated that the students of I.C.S.E. board were more emotionally competent than those from U.P. board. Results also showed that emotional competence was affected by anxiety. Students with low anxiety were more emotionally competent whereas the students with high anxiety showed low emotional competence. The interaction effect of anxiety and educational board was not found to be significant.

Qureshi and Bhargava (1998) studied the emotional maturity among student leaders. The leaders were selected from amongst college student through an observation of teacher and through their well established positions and success in their respective areas. Interviews were held for final selection. After the selection of leaders, Emotional Maturity Scale by Singh and Bhargava was administered on them. The results show male and female leaders having significant differences among the educational levels (P.G and U.G) for all three types of leaders i.e., Union, Sports and Cultural. It means that educational level makes a significant difference for leadership. But no significant difference exists among male and female leaders.

Some authors have experimented unusual means to measure emotional aspects of human being. For example, Prakash and Lahiri (2000) studied to discover the relevance of the challenging declaration of the psychologists that emotional maturity can be measured scientifically through handwriting analysis. The sample consisted of thirty emotionally stable and unstable adolescent boys and girls. They were asked to choose one card out of the fourteen cards of the T.A.T. (Thematic Apperception Test), and writing on original short story on it. The analysis of the graphic movements through the universal, standard and scientific norms of graphology reveals that there are significant differences in the patterns of handwriting of emotionally stable and unstable adolescents.

2.3.10.10 Conceptualization and assessment of emotional intelligence in Indian context

As psychological processes are assumed to be culturally constituted and may be expected to vary with differences in cultural meanings and practices, Misra et al. (2004) paper examines the notion of emotional intelligence (EI) in the Indian socio-cultural context. An attempt has been made to discern the indigenous notion of EI based on the perspectives of people (parents, teachers, and children) in the contemporary Indian society, where people exhibit a relational and context sensitive construal of self. Results indicate that Indian view of EI is embedded in its highly valued social concerns, virtues, cultural traditions and practices. These provide a frame for emotional learning and are therefore basic to the notion of EI. Responding to open ended questions, the participants (N=1047) described the emotional qualities desired by them in children and those required to be successful in life. The indigenous view of EI takes into cognizance such factors as social sensitivity, pro-social values, action tendencies and effective states. Results indicate that the Indian view of EI is context sensitive and focuses on the role of family and society in shaping one's emotions.

By adopting a qualitative mode of inquiry Sharma and Sharma(2004) explored the notion of emotional competence among a sample of adolescents (N=70). Open ended interview and classroom-based enactments as well as written exercises accompanied by group discussions were the main strategy for making sense of the perspectives of the children. The study enabled to discern the varied understanding and use of emotion in children's everyday lives. Their developing awareness of emotions as means of describing oneself is demonstrates the interplay of thought and feeling.

Pant and Prakash (2004) critically evaluated one of the original measures of emotional intelligence, the MEIS in the Indian context. It can be concluded that most of the reliabilities of the MEIS subtests are weak for the Indian sample. The inter correlations between the sub-tests indicates that the MEIS do not meet the correlation standard for an intelligence. Further in the Indian sample no substantial gender differences were observed in emotional intelligence and there were weak (also negative) relationships of with criterion measures of empathy and social skills.

Singh (2004) presents the findings of a study initiated for developing and standardizing a measure of Emotional Intelligence (EI). While writing the items, the study has followed Goleman's (1998) Model of EI competencies. Five dimensions: Self-awareness, Self Regulation, Motivation, Empathy, and Social Skills have been incorporated. Data were collected from managers (N=263) from various functional areas and representing a heterogeneous set of organizations. The scale was constructed and tested to examine the hypothesized positive relationship with three variables viz., organizational commitment, emotional expression and quality of life. The five dimensions of EI were positively correlated with organizational commitment, emotional expression, and quality of life, suggesting concurrent validity.

Bhattacharya et al. (2004) attempted to examine the factor structure of the construct of emotional intelligence in India. From a pool of 130 items drawn from various scales developed in western countries, 49 items were selected that were subjected to principal component factor analysis followed by varimax rotation. Analysis yielded five factors: appraisal of negative emotions appraisal of positive emotions interpersonal conflicts and difficulties, findings suggested that the construct of emotional inter-personal skills and flexibility, and goal-on

warding intelligence involve appraisal and experience of emotion for self and inter-personal situations in valence-specific terms (positive-negative) in India.

The developmental changes in emotional intelligence (EI) were investigated by Panday and Triparhi (2004) in a sample (50 males and 50 females) from five age groups (5-6 yrs, 8-9 yrs, 14-15 yrs, and 17-18 yrs.). They completed the measure of EI consisting of identification of emotion, perception and recognition of emotion-with probing, perception and recognition of emotion-without probing, understanding emotional meaning, and emotion intensity rating. The results indicated that there was increase in EI with age and females were more proficient in managing and handling their own emotions as well as of others.

A number of studies have shown the EI is related to effective social people with interaction. For instance Schutte et al (2001) found that on higher scores on EI had higher scores on close affectionate relationship.

In an attempt to set out the theoretical foundation of emotional intelligence as a constellation of traits and self-perceived abilities, Pitrides and Furnham (2001) concluded that trait emotional intelligence can be conceptualised as a distinct composite construct at the primary level of hierarchical trait structures.

Tiwari and Srivastava(2004) investigated developmental changes in emotional intelligence (EI) on a sample of primary school children (N=270). They were drawn from different schools following a 2x3x3 factorial design, consisting of two gender groups (Male/Female), three types of medium of instruction (Hindi, English and Mixed) and three grades (third, fourth and fifth). The results showed that gender had no significant main effect while medium of instruction and grade had significant main effects on all the three components of

EI i.e. Expression and Appraisal, Regulation and Utilization of emotions. It was noted that the children attending English medium schools scored higher followed by Hindi and Mixed medium school children, respectively. The older children of fifth grade scored higher than third and fourth grade children. It was found that perceived environmental quality of home as well as school was positively related to EI scores.

Relationship of the factor-analytically derived dimensions of emotional intelligence (EI) with some of the organizationally relevant outcome variables was examined by Sinha and Jain(2004) based on the data obtained from 250 middle-level male executives of two-wheeler automobile manufacturing organizations. Results based on multiple regression analysis suggest that the dimensions of EI were meaningfully related with the job satisfaction. Personal effectiveness, organizational commitment, reputation effectiveness, general health, trust, turnover intention, organizational effectiveness, and organizational productivity.

In the Indian context, the use of EI concept is extremely important because Indians, by and large, have high affiliation need which, if effectively tapped through the appropriate use of the concept of EI, can lead to significant gains in the productivity. Moreover, given the fact the Indian organizations are now becoming more and more outward-looking, taking cognizance of cultural differences and sue of the concept of EI for dealing with such variations to their advantaged would considerably enhance their capability to achieve an even-level playing relationship with the world economic leaders.

The possibility of developing skills related to emotional intelligence has been scrutinized by several investigators. For example Guinan (2001) has opinioned that success in sport and physical activity requires individuals to assume a variety of roles and exhibits mental, physical, and emotional strength.

He claims that through his workshop, participants will experience activities designed to help individuals become more conscious of what they can offer their group or team, as well as what they need to develop, and what they need from others to be successful. This process continues to open lines of communication, relationship building, appreciation, and compassion for the many differing personality styles within any group of two or more.

Ultimately, by learning about themselves and others, and by learning to communicate and relate more effectively, individuals will be better prepared to promote team work, build self esteem, gain cooperation, reward performance, accept change, resolve conflict, and improve communication and interpersonal dynamics.

2.3.10.11 Reviews on emotional intelligence: an overview

Regarding the review of related literature on emotional intelligence some conclusions can be drawn.

1. As an emerging concept emotional intelligence is found to be related to important psychological factors such as mental health/well-being, personality, intelligence etc.
2. The role of emotional intelligence in the realm of sport can not ignored.
3. Emotional intelligence varies with culture.

2.4 Intelligence

A number of theories of intelligence are put forward by different investigators. Each one is important and has its own standing point of view.

The central issue that has dominated theoretical models of intelligence is the question of whether is a single global ability or a collection of specialised

abilities. The hierarchical scheme for organising mental abilities is a careful device that is endorsed by many psychologists on both sides of Atlantic. Another well-known scheme for organising intellectual traits is the structure of intellect model by J.P. Guilford (Urbina, 1996).

A special kind of theory proposed by R.B. Cattell and Horn involves distinction between crystallised and fluid intelligence. Sternberg's triarchic theory of intelligence consists of three parts: contextual, experiential and componential sub theories. Another divergent view of intelligence is Howard Gardner's theory of multiple intelligence.

The theory of multiple intelligence makes two strong claims. The first is that all humans possess all the kinds of intelligences. The second claim is that just as well as look different and has unique personalities and temperaments we also have different profiles of intelligences (Gardner, 2000).

2.4.1 Academic performance and intelligence

There have been many investigations regarding the relationship between intelligence and academic performance. A large number of studies have been conducted both in India and abroad to study this relationship. Studies of Burt (1921) and Rudolph (1931) support the notion that intelligence affects achievement. Burt observed that children with high intelligence were generally superior to those with low intelligence in linguistic and abstract subjects. Later Freeman (1942) concluded that a positive correlation exists between intelligence and achievement. He finds such relationship vary from 0.40 to 0.60 with mean near about 0.50.

In an elaborative study Shaw (1949) highlighted the relationship between Thurstone 'primary mental abilities' and school achievement of high school children. He showed that verbal meaning ability was highly correlated to every

high school achievement measures used while number activity, word fluency ability, memory ability and spatial ability had little relationship to the measure of achievement. The last one is more relevant regarding sport behaviour.

Crano et al., (1972), Kaur et al., (1995), and Pramod and Shanthi (1996) are the few who have recognised the influence of intelligence on academic performance.

2.4.2 Intelligence and Personality

Sreekumar and Mathew (2003) explored the extent of association that the personality dimensions are having with Intelligence and Quality of Social Interaction in the case of adolescent students. A sample of 151 higher secondary students (including both boys and girls) were taken for the study. I.A.S. Rating Scale, Mathew Test of Mental Abilities (verbal) and Facilitative ness Rating Scale were used for data collection. The data were statistically treated using correlation coefficient method and t-test. The results show that Inertia has a significant negative correlation with Intelligence. Activation has a positive with intelligence only in the case of boys. Stability has a positive correlation with Quality of social interaction only in the case of girls. Boys and girls differ significantly in Inertia and Activation. The results show that boys are having more activation while girls are having more inertia.

2.4.3 Intelligence and Sport performance

Though present researcher can focus certain studies revealing the relationship between intelligence and academic performance, unfortunately a primary survey reveals the scarcity of studies exploring the relationship between intelligence and sport behaviour. However, general intelligence is a prerequisite in sport performance Kamlesh (1983).

Schmidt (1988) explains the relation between intelligence and motor performance. Intelligence is usually defined as a capacity of individual to act purposefully, to think rationally, and to deal effectively with the environment. It stresses the activities involving abstract concepts, reasoning, and the acquisition of knowledge and education, the idea of intelligence implies abilities related to cognitive skills, such as might be learned in the classroom. It is, therefore, difficult to define intelligence (some have defined intelligence as “what intelligence tests measure”), and a large variety of different tests are available.

We might expect that intelligence-whatever it is- would probably be related positively to success in skilled activities. One point of view is that we appear to be processors of information when we produce motor skills (chapter 4 and 5), so more effective information processing as a result of greater IQ would lead to more effective performance. For such reasons, we might expect to see strong differences in motor skills among groups classified according to IQ, or correlations between IQ and performance. There are intelligence-related differences in skilled performance when the IQ range examined is extended downward, however. For example, if performances of people with very low IQs are studied, virtually every skill examined is performed less effectively as compared to subjects of “normal” intelligence. There are decrements in strength, speed, accuracy, anticipation, balance, and so on. The study of motor behaviour with retarded persons has been quite active lately, and a great deal of research has documented the various ways in which their skill levels are or are not different from “normal” (Schmidt,1988). While the reasons why deficiencies in IQ are so strongly related to motor behaviour have not been well understood, there are various hypotheses. One is the idea that retarded people are generally less active physically (often being institutionalized or in special classes or schools), so that the decrements are perhaps due more to a lack of movement experiences in childhood than to any deficiency in mental functioning. A second

idea is that at severely low IQ levels (but not at normal levels), there is a general depression of the functioning of the entire central nervous system, including those parts that are primarily involved with motor control and motor learning. Yet many instances exist of people with low IQs being trained to perform very skillfully on production line tasks where motor performance is critical but decision making is not (Schmidt, 1988).

But such relationships have not generally been found in certain studies quoted by Schmidt. For example, Ryan found no relationship between academic achievement (presumably related to IQ) and performance on a balancing task (stabilometer). Start showed that IQ and learning of a novel gymnastics stunt were correlated only 0.08, suggesting few common abilities between the two tests. Tests of mental abilities and tests of motor abilities are generally related only minimally in children and adults. But Ismail, Kephart, and Cowell found moderate relationships between motor tests and academic achievement. Also, there are only minor differences between athletes and nonathletes in terms of academic success in high school or college, with some studies showing disadvantages.

Zuskova and Stejskal assume that sport intelligence shall be the outcome of high level of analytic synthetic activity of central nervous system and highly developed ability of a sportsman to be aware of own emotional and vegetative level, which together with functional, psychic, somatic and motor preconditions enables to reach an optimal technique and sport performance (Zuskova and Stejskal, 2004).

According to Smaulski et al (2001) the concept of intelligence of game is generally related to the terms: "problem solving", "thinking", "rationality" and "perception". In the association test, significant differences were found between male and female athletes regarded to the terms "illumination", "concentration"

and “magical thoughts”. These terms were significantly more associated with intelligence of game by male athletes. The conclusion of this study is that the concept of creativity and intelligence of male and female athletes are significantly different in terms: “magical thoughts”, “irrationality”, “presentiment”, “illumination” and “Concentration”, considering higher scores for the male athletes.

Bacanac et al. (2001) correlated athlete’s simple and complex reaction time with classic IQ tests. It is clear that speed of reaction represent those motor sensory ability which, together with intelligence, dispositions of temperament and motivation, determine success in every sport. Because of it high genetic determination, it can serve as one of the selection criteria for young talented athletics, and since it also represents one of the biological correlates of intelligence, it also gives valid data in regards to the cognitive sphere of athlete’s personalities.

It is interesting to note that Gobet et al. (2004) disagree with Howard Gardner’s comments on intelligence in sport domain. Based upon the evidence that the best chess players in the world are becoming increasingly represented by relatively young individuals, Howard Gardner claimed that human intelligence is rising over generations. They suggest that this explanation has several difficulties, and show that alternative explanations relating to changes in the chess environment, including increased access to chess knowledge, offer better explanations for the increased presence of young players at top-level chess. In sum, contemporary younger players have typically started chess at an earlier age, they are more likely to be professional, they can make greater use of computational and other chess resources, they may benefit more from advances in chess training, and, probabilistically, they are more likely to yield grandmaster level players very early because of the size of the chess playing population. We

suggest that these factors may cumulatively underlie the youth effect in top-level chess in addition to, or instead of, any intelligence-related effect.

As more and more people realize that sports competition is not only the exhibition of athletes' fits but also the test of athletes intelligence, in the applied field of sports psychology to select athletes in China, identifying cognitive capacity is one of the main parts (Li, 2001). Since athletes are always in the state of motion, the main expression form of athletes' intelligence is operational intelligence. The research on athletes' intelligence is indeed interesting but difficult. How to identify the athletes' intelligence whether the athlete's IQ is higher or lower than the average level and many relative problems are still unsolved. With the similar or different methods and instruments, many researchers reached completely different results and conclusions. More and more researchers put emphasis on the importance of research methods and instruments.

How to identify the athletes' operational intelligence is difficult. For a long time, Chinese sport psychologists followed former Russian method and theory. One tool of Russia to test operational intelligence is called 'Three-chip', that is put three chips labeled with number from 1 to 3 in the three squares of five squares randomly. The task of subjects is to move these three chips and put them in the upper three squares in order according to the rules. At one time, 'Three-chip' was wide used in China and made a positive role in the selection of athletes. But at the same time, many researchers and coaches complained that 'Three-chip' is too simple and casual to distinguish the athletes' intelligence level and due to lack of consensus position design standard. Since computer is famous for its thorough logic, its operation process is similar to that of human brain and it also has many other advantages that can contribute to psychological research, these stimulate psychologists to combine the achievements of computer and psychology together. Dr. Jiaxin Yao coming from Wuhan Institute of

Physical Education made use of BORLAND C++ and designed “WT-operational thinking system” (abbreviated as ‘WT system’). Taking warning from ‘Three-chip’, the framework and position of ‘WT-system’ is changed as follow: Thus computer have more than 166, 3000 problems in reserve, computer can present different problems randomly to different subject and can calculate results automatically.

Li found that ‘WT system’ is supper than ‘Three-chip’. He concludes that the expression form of athletes’ intelligence is not the same as that of intellectual workers. So some instruments such as Wechsler Adult Intelligence Scale is not suitable fit identifying athletes’ intelligence. Since athletes may come from different events, while the circumstances athletes may face during the test of ‘WT-system’ is relatively fixed and different from the real situation of training and competition. So that the efficacy of the system may be challenged (Li, 2001).

For a long time we have assumed that motor development is important to the development of intelligence in children (Hetherington & Parke,1975) and that learning potential will vary with a person’s physical fitness level. Since the 1970s researchers have looked for evidence that would validate these two assumptions. Although the findings are still somewhat inconsistent, there is some research support of the relationship between exercise and cognitive functioning. Narrative reviews, for example, have not clearly or conclusively proved that beneficial effect of exercise on cognitive functioning. Statistical reviews found that exercise had a modest positive relationship with improved cognitive functioning. Chronic exercise, in comparison with acute exercise, showed greater effects on cognitive performance. That is, exercise programs conducted over longer periods of time are associated with gains in cognitive functioning ,however, this does not demonstrate a cause-effect relationship necessarily (Weinberg and Gould,1999).

2.4.5 Reviews on intelligence: an overview

Regarding the review of related literature on intelligence some conclusions can be drawn.

1. Intelligence may serve as a personal resource that can facilitate personal growth and adjustment.
2. The study of intelligence gets more importance as new constructs are claimed to possess equal or higher significance than intelligence in life success
3. The number of studies revealing exact relation between intelligence and motor performance is not numerous compared to its importance in sport.
4. The exact relationship of the concept intelligence with other relevant variables like emotion, mental health etc are yet to be decided.

Chapter 3

Method

This chapter describes the various steps followed by the investigator to conduct the research. The method devised for the same consists mainly of the following four sections.

3.1 Sample

In this section, the procedure used for selection of a sample, and properties of the sample for the present investigation are described.

3.2 Measures

This section gives an account of nature and statistical properties of the measures used to collect the required information for the present study.

3.3 Procedures

This section deals with a discussion of the data collection procedures, details of administration and scoring of the different measures.

3.4 Statistical analysis

This section describes the different statistical methods used for analyzing the data collected in order to realize the objectives of the study.

3.1 Sample

Sample can be defined as “a small proportion of a population selected for observation and analysis” (Best & Kahn, 1995). Cluster sampling method has been used to select the sample for the present investigation.

One of the forms of probability sampling is cluster sampling (Kerlinger, 1996). If the total area of interest happens to be a big one, a convenient way in which a sample can be taken is to divide the area into a number of smaller non-overlapping areas and then to randomly select these smaller areas (usually called clusters), with the ultimate sample consisting of all (or samples of) units in these small areas or clusters. Thus in cluster sampling the total population is divided

into a number of relatively small sub- divisions which are themselves clusters of still smaller units and then some of these clusters are randomly selected for inclusion in the over all sample. If the clusters happen to be some geographic sub-divisions, in that case cluster sampling better known as area sampling (Kothari, 1999).

The population for the present investigation is defined as sport persons in South India. As shown in figure 3.1. different clusters were identified based on geographic subdivisions such as Andra Pradesh, Karnataka, Kerala, Tamil Nadu (states) and Pondichery(Union Territory)

The only national agency with a broad networking, and infra-structure which promote sports development in the region, is Sports Authority of India (SAI). Different locations of sports promotional schemes of SAI in southern region are shown in figure 3.2.

From these clusters Kerala state was randomly selected by lottery method and the data were collected from all the centers in Kerala(figure 3.3)

The final sample consisted of 304 sport persons. The mean age of the sample is 17.51years and it ranges from 15 to 25years.

Fig.3.1

Map of India: Defined population, geographical sub-divisions,
and the selected area

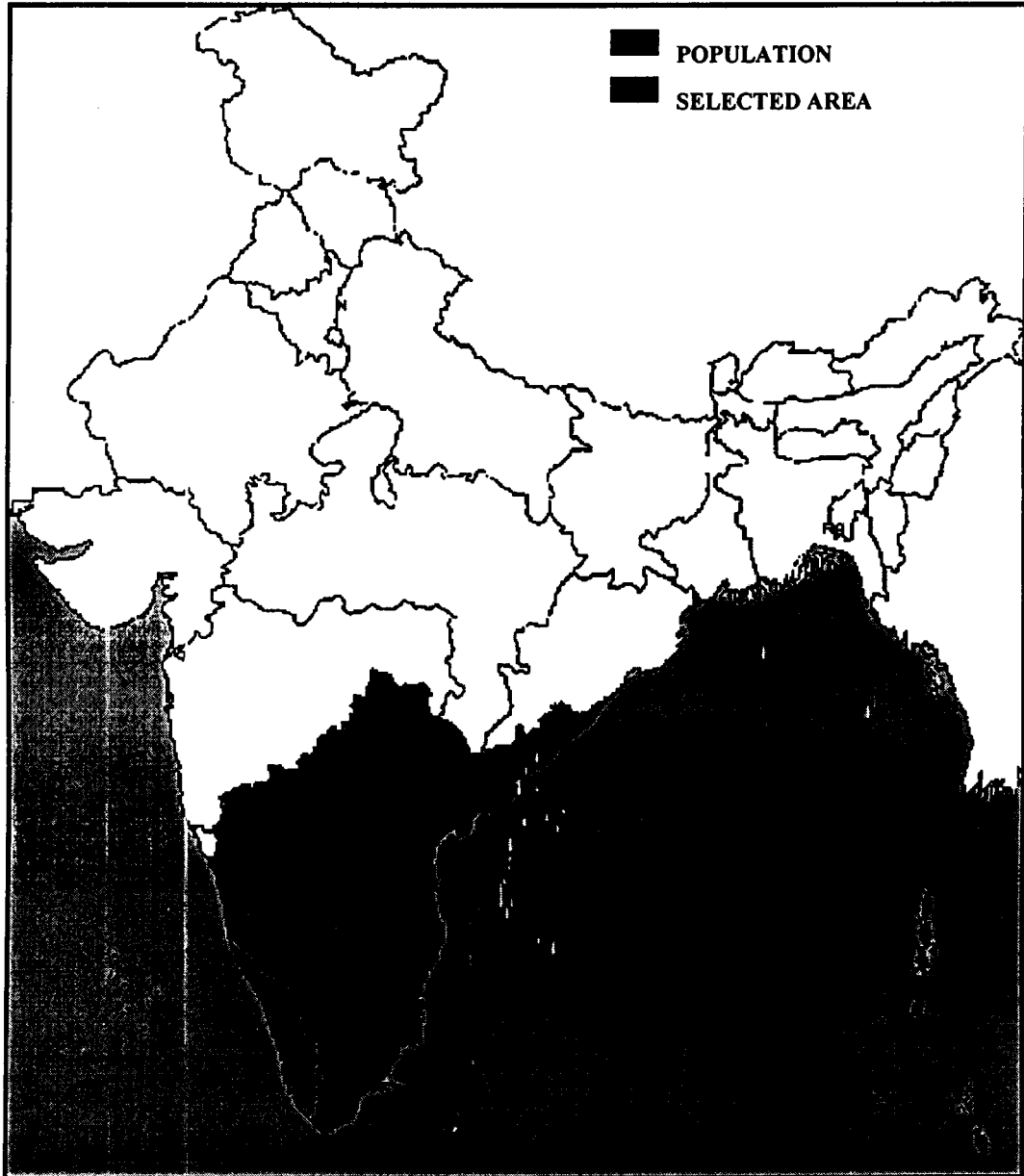
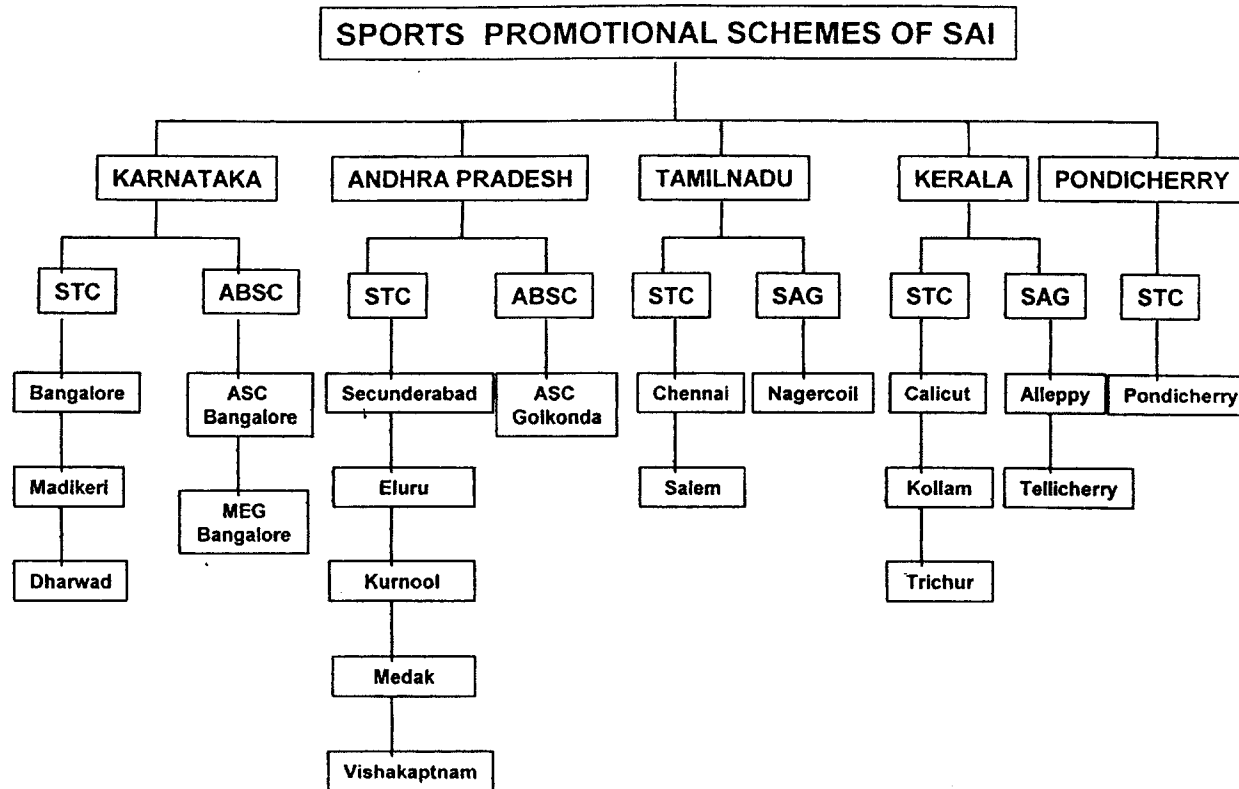


Fig. 3.2

Locations of sports promotional schemes of SAI in South India



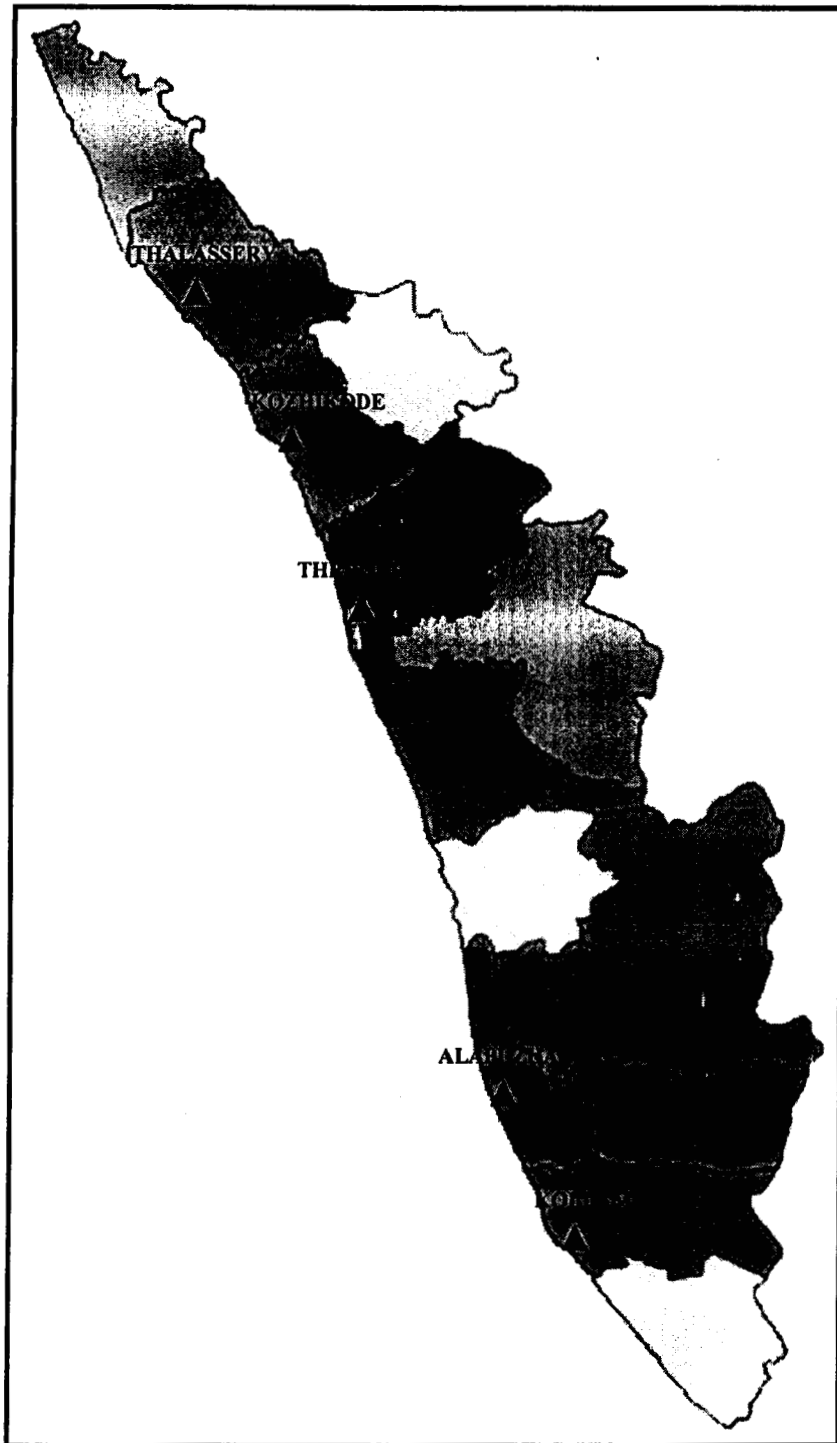
STC - SAI Training Centres

ABSC - Army Boys Sports Company

SAG - Special Area Games

Fig.3.3

Map of Kerala: Locations of sports training centres in Kerala



3.1.1 Sample break up based on sex

The sample comprises of both sexes. The break up of the sample based on sex is given in table 3.1.

Table 3.1

Distribution of subjects based on sex.

Sl. No	Sex	Number of subjects
1	Male	161
2	Female	143
	Total	304

3.1.2 Sample break up based on nature of sport

The total sample consists of sport persons belong to different sport categories. All movement (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 foot ball 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. On the basis of the predominance of the types of skills, various sport disciplines were categorized into two different skill categories such as ‘open skill category’ and ‘closed skill category’. Thus open skill category includes disciplines like football, basketball, baseball, badminton, boxing, hockey, kho-kho, kabady etc whereas disciplines like athletics, weight lifting, gymnastics, rowing, swimming et are categorized as closed skill category. The breakup of the sample based on nature of sport is presented in table 3.2.

Table 3.2.

Distribution of subjects based on nature of sport: Open and closed skill category

Sl. No	Skill category	Number of subjects
1	Open	165
2	Closed	139
	Total	304

3.1.3 Sample break up based on Levels of Participation (LOP)

The International participation is considered as the highest level participation followed by national level and state level participation. Same can be considered as the indicator of the level of performance of the particular sport person. This information is taken for granted to classify sport persons into three groups such as: 1.international level,2.national level, and 3.state level performers(table 3.3).

Table 3.3

Distribution of subjects based on levels of participation (LOP).

Sl. No	Levels of participation	N
1	State	94
2	National	178
3	International	32
	Total	304

3.1.4 Sample break up based on Levels of Experience in sport (LOE)

The Background Information Schedule provides with a room for indicating the total years of sport experience of the subjects. The period of experience ranges from 1 to 15 years. Based on the mean and standard deviation the whole sample was divided in to three: novice sport persons, sport persons with moderate experience, and sport persons with high experience; Mean -1 SD as novice, Mean + 1 SD as high experience, and in between these two standard deviations as moderate(table 3.4)

Table 3.4

Distribution of subjects based on levels of experience in sport (LOE)

Sl.No	Levels of experience.	N
1	Novice	78
2	Moderately experienced	58
3	Highly experienced	168
	Total	304

3.1.5 Sample break up based on Family Sport Status (FSS)

It was found that the subjects are having father, mother, brother, sister, uncle, aunt, grandfather etc involved in sport. Those sport persons having close relatives (father, mother, brother and, sister) were grouped as sound FSS; those having distant relatives(uncle, aunt, grand-father etc-all relatives other than close relatives)as moderate FSS; and the persons having neither close relatives nor distant relatives as poor FSS. Sample break up based on family sport status is given in table 3.5.

Table 3.5

Distribution of subjects based on family sport status (FSS)

Sl.No.	Family Sport status	N
1	Poor family sport status	172
2	Moderate family sport status	44
3	Sound family sport status	188
	Total	304

3.1.6 Sample break up based on Punctuality

The sample was divided into three groups based on the response of the subjects on a self rating scale where they evaluated themselves as highpunctual, moderate punctual, and low punctual. The sample break up based on various levels of punctuality is given in table 3.6

Table 3.6

Distribution of subjects based on levels of punctuality

Sl.No.	Punctuality	N
1	Low punctual	42
2	Moderate punctual	82
3	High punctual	180
	Total	304

3.1.7 Sample break up based on Self-practice

Self-practice is initiated by the person himself or herself apart from the compulsory training by the coaches or any other significant persons. The sample was divided into three groups based on the response of the subjects on a self-rating scale where they evaluated themselves as doing high in self-practice, moderate in self-practice, and low in self-practice. The sample break up based on various levels of self-practice is given in table 3.7

Table 3.7

Distribution of subjects based on levels of self-practice

Sl.No.	Self practice	N
1	Low self practice	31
2	Moderate self practice	37
3	High self practice	236
	Total	304

3.1.8 Sample break up based on Perceived Self-Competence

All the subjects evaluated themselves on their perceived competence as highly competent, moderately competent, and less competent. Based on the response of this rating the sample was divided into three as highly competent, moderate competent and less competent. The sample break up based on this variable is presented in table 3.8

Table 3.8

Distribution of subjects based on levels of perceived self-competence

Sl.No.	Competent	N
1	Low Competent	38
2	Moderate Competent	180
3	High Competent	86
	Total	304

3.1.9 Sample break up based on Personality Type

Employing 'A scale of Type –A personality Pattern', some of the individuals were identified as Type-A individuals. The rest of the subjects were non-Type-A individuals, these individuals are denoted as Type-B individuals for the present investigation. The sample break up based on this variable is presented in table 3.9.

Table 3.9

Distribution of subjects based on personality type

Sl.No.	Personality type	N
1	Type –A sport persons	225
2	Type –B sport persons	79
	Total	304

3.2. Measures

The present investigation involves many variables like mental health, personality, emotional intelligence, and intelligence and hence different measures are needed. According to the nature of attributes to be measured, different techniques were used. The measures used included those which had been developed and standardized by experts in the field and by the investigator herself. The measures employed were:

1. Background Information Schedule
2. Self rating scales
3. Mental Health Status Scale (Gireesan and Sam sanandaraj,1988)
4. A scale of Type –A personality Pattern (Robert et al , 1998)
5. Emotional Intelligence Scale For Sport Persons (Rajitha, and Jayan, 2003)
6. Advanced Progressive Matrices (Raven, 1989)

A brief description of the tools used is given below.

3.2.1 Background Information Schedule

Since the present investigation intends an in-depth analysis, other relevant information besides the major psychological variables, were collected. This

background information schedule was formulated based on the suggestions of experts in the field of psychology and sport.

Along with the basic information of name, age, sex and particular sport discipline the sport person is engaged in and the following information were also collected.

1. Levels of participation (LOP)
2. Levels of experience in sport (LOE) and
3. Family sport status (FSS)

A copy of Background Information Schedule is given as appendix I

3.2.2 Self-rating scales

Three 3-point self-rating scales viz. punctuality, self-practice and perceived self-competence were developed for assessing corresponding attributes. Description of each term is as follows.

3.2.2.1 Punctuality

Punctuality as a personal characteristic has greater demand in sport. The sport persons evaluate them selves as highly punctual, moderate punctual, and low punctual.

3.2.2.2 Self-practice

Tremendous practice makes the sport person perfect but the willingness to do the same may vary from person to person. The subjects responded on this variable as doing more voluntary practice compared to others, moderate voluntary practice, and less voluntary practice. Self-practice is initiated by the person himself or herself rather than the compulsory training by the coaches or any other significant persons.

3.2.2.3 Perceived self-competence

All the subjects evaluated themselves as highly competent, moderately competent, and less competent.

A copy of Self-rating scales is given as appendix II

3.2.3 Mental Health Status Scale

This scale has been developed by Gireesan and Sam Sananda Raj (1988) for measuring the positive mental health status of the individuals. This refers to behaviour, attitudes and feelings that represent an individual's level of personal effectiveness, success and satisfaction. This test has six sub scales and each sub section has twelve statements. The following are the six sub scales:

1. Attitudes toward the self
2. Self actualisation
3. Integration
4. Autonomy
5. Perception of reality and
6. Environmental mastery.

Reliability and Validity

As per the report of the scale developers, the scale is reliable with good coefficients. The split-half reliability of each sub scales vary between 0.73 to 0.89 and the test retest reliability is also found to be significant and varied between 0.63 to 0.76 respectively. All these coefficients are found to be highly significant.

Validity of the scale has been established by validating against another scale, measuring the same variable. The validity coefficient of each sub scale is

greater than 0.7, and hence the scale has fairly good validity. (A copy of the scale is given as appendix III).

3.2.3.1 Re-standardisation of Mental Health Status Scale

Mental Health Status Scale consists of 72 items. The statements from the original scale were included in the revised one. The response categories are the same as the original one viz. strongly agree, agree, undecided, disagree, strongly disagree. A numerical weight of 5 to 1 is given to a positive statement and 1 to 4 to a negative statement.

Sample

For standardization the draft scale was given to a sample of 478 sport persons. The sample of subject was randomly selected from different sport disciplines. According to the nature of skills involved all the disciplines were divided into two: open skill category, and closed skill category. Thus the included 126 males and 88 females in closed skill category, and 167 males and 97 females in open skill category.

The draft scale was administered to a sample 478 subjects. All the 478 subjects were rank ordered according to the total score in the inventory. Then the top 100 and bottom 100 subjects were selected to represent the high and low mentally healthy groups separately. The performance of the high and low groups in each item was compared using t- test. According to the t- values the discriminating power of the items were identified. The higher the t- value, the higher is the discriminating power. The results of the t- test for seven domains (twelve items each) of mental health are given in the table 3.10.

Table 3.10

Mental health status scale: The t- values in the draft scale

Item No.	Attitude towards self	Self-Actualisation	Integration	Autonomy	Perception of reality	Environmental mastery
	t-value	t-value	t-value	t-value	t-value	t-value
1	2.90	4.5	5.25	6.01	6.79	3.15
2	2.72	7.32	6.13	6.79	2.65	6.95
3	4.46	6.33	5.76	9.21	7.83	3.76
4	8.36	5.49	6.54	7.14	5.50	9.92
5	9.39	5.97	6.48	2.59	5.30	7.18
6	6.20	8.38	3.15	4.03	5.63	9.13
7	5.83	5.90	4.80	3.75	7.40	7.99
8	5.68	5.87	7.53	4.37	5.41	7.41
9	7.57	4.88	8.53	6.68	5.16	3.93
10	9.50	4.54	6.54	5.27	5.94	8.08
11	3.51	8.48	7.23	5.90	7.62	8.09
12	3.10	5.15	8.01	8.55	4.45	6.21

All the t-values are significant at 0.05 level.

The t-values obtained are greater than table value (2.58), indicating that 72 items in the scale are able to discriminate the individuals having high and low mental health. Hence these 72 items were selected for the final scale.

Reliability and Validity

The reliability of the test has been established by the method of Cronbach Alpha, and the Alpha coefficient obtained for the entire scale is 0.94 and that of the subscales are attitude toward self 0.55, self-actualisation 0.60, integration

0.68, autonomy 0.58, perception of reality 0.58, and environmental mastery 0.67. So the scale could be reasonably reliable. Since the test is based on a standardized scale and all the items were selected from that scale, the present scale can be said to have construct validity.

3.2.4 A scale of Type-A personality Pattern (Robert et al., 1980)

Type- A and Type- B represent two ends of a continuous temperamental pattern of individuals. The Type- A personality pattern is found to show behavioral dispositions such as ambitiousness, aggressiveness, competitiveness, impatience, sense of time urgency, goal directedness with out proper planning, and polyphasic behavior.

1. An intense sense of time urgency

‘An intense sense of time urgency’ is a tendency to race against the clock, even when there is little reason to the person feels a need to hurry for hurry’s sake alone, And this tendency has appropriately been called ‘hurry sickness’. Time urgency is measured by items 1,2,8,12,13, and 14 in the scale.

2. Inappropriate aggression/ hostility

‘Inappropriate aggression’ reveals itself in a person who is excessively competitive and who cannot do anything for fun. This inappropriately aggressive behavior easily evolves into frequent displays of hostility, usually at the slightest provocation or frustration. Competitiveness and hostility is measured by items 3, 4, 9, and 10.

3. Polyphasic behaviour

‘Polyphasic behaviour’ refers to the tendency to overtake two or more tasks simultaneously at inappropriate times. It usually results in wasted time due to inability to complete the tasks. This behaviour is measured by items 6 and 11.

4. Goal directedness with out proper planning

‘Goal directedness without proper planning’ refers to the tendency of an individual to rush into work without really knowing how to accomplish the desired result. This usually results in incomplete work or work with many errors, which in turn lead to wasted time, energy and money. Lack of planning is measured by item 5 and 7.

A copy of the scale is given as appendix IV

3.2.5 Emotional intelligence scale for sport persons

Emotional Intelligence Scale for sport persons was developed and standardised for measuring emotional intelligence. The measure consists of five domains based on Goleman's (1995) theory of "emotional intelligence" as follows:

1. Self awareness
2. Self regulation
3. Motivation
4. Empathy
5. Social skills.

Reliability and Validity

Reliability of the Emotional Intelligence Scale for Sport Persons is calculated by test – retest method and is found to be 0.82 (N=61), for the total scale and reliability for each sub test are reported as self-awareness (0.50), self-regulation (0.66), motivation (0.74), empathy (0.65), and social skills (0.63).

For the present scale split half reliability coefficients were estimated. The scale was administered to a sample of 61. Reliability coefficients were

calculated for all the five dimensions separately. The split-half reliability coefficients of the scale for different domains estimated are self-awareness (0.76), self-regulation (0.68), motivation (0.71), empathy (0.97), social skills (0.97), and that of the entire scale is 0.87 (N=61).

Since the scale measures comprehensively the factors of Emotional Intelligence, it has content validity. Construct validity of the scale was estimated by correlating the emotional intelligence scores with the scores of Mental Health Status Scale (Gireesan and Sam Sananda Raj,1988). It was found that the Pearson Product Moment Correlation between these two scores is 0.49(N=304).Since, emotional intelligence is conceptualized as a construct highly related with mental health, the computed value of correlation is statistically significant ($P<0.01$) to be considered as a criterion for construct validity of the present scale.

Being an indicator of unhealthy behavior pattern, the scores on A scale of Type –A personality Pattern (Robert et. al , 1980) were correlated with the scores of Emotional Intelligence Scale for Sport Persons. As predicted a statistically significant negative correlation (-0.19 , $P<0.01$, $N=304$) was calculated. This value seems to be a clear indication of the construct validity of the newly developed scale.

Emotional intelligence is slightly and positively correlated with intelligence measured by Advanced Progressive Matrices (Raven, 1989), 0.05; which is too small to be significant, for these two constructs are largely independent entities. The trend of the relationship between emotional intelligence and intelligence is positive but insignificant, Exactly the same idea has been put forward by the proponent of emotional intelligence, Goleman (1995). Altogether, it can be said that Emotional Intelligence Scale for Sport Persons has met the criteria for construct validity. A copy of the scale is given as appendix V.

3.2.6 Advanced Progressive Matrices

The progressive matrices developed in Great Britain by J.C. Raven. This test is considered by most British psychologists as the best available measure of 'g' factor as in the case of Spearman.

There are three types of progressive matrices, such as the Standard Progressive Matrices (SPM), Coloured Progressive Matrices (CPM) and Advanced Progressive Matrices (APM). Ravens Progressive Matrices is a test of observations, capacity for clear thinking and accurate intellectual work. It involves two sets – set I and set II. Set I can be considered as a preliminary test for the set II, which consists of 36 problems while set I consists of 12 problems.

Reliability

Numerous reliability coefficients have been reported by Raven that vary from the low 0.80's to the high 0.90's. It has high test – retest reliability of 0.91.

Validity

Validity of the test has been studied in various ways. The progressive matrices correlated against verbal and other non-verbal group scales. Using the former the resulting coefficients varied rather markedly from 0.40 to 0.67. one copy of the response sheet of APM is given as appendix VI.

3.3 Procedure

The required data were collected from different SAI, STC centers situated in Districts of Kerala state. The in-charges of all the 5 centers were contacted by prior appointment and had a discussion about the purpose of the study as well as the importance, nature, application and nature of information required for the study. Then the in-charges introduced the investigator to the coaches of the

various sport disciplines through proper way. The coaches then introduced corresponding sport persons to the investigator. The nature and purpose of the study were again explained to the coaches and the subjects. They were told that, since it was a research work their responses should have been too sincere and intimate, and assurance was given to each subjects that the information gathered from them would be used only for research purpose and that everything including their identity would be kept confidential.

The researcher started data collection from the southern SAI center i.e. Kollam followed by other centres, Alappuzha, Thrissure, and Calicut to finish at the Northern Center Thalassery. Group Administration of the tests was performed on small groups of 20 to 30 sport persons. For ensuring subject's interest and involvement and to avoid fatigue all the six measures were grouped into two. The first group of measures Background Information Schedule, Self-Rating Scale and Mental Health Status Scale were administered in one session followed second group of measures, Type-A personality pattern, Emotional Intelligence Scale for Sport Persons and Advanced Progressive Matrices on the next session. Fifteen minutes of intervals were provided in between two consecutive tests. This method of data collection was found to be of great advantage in many ways.

1. The effect of fatigue due to frequent administration of inventories was minimized by dividing the total administration time into two.
2. The rapport between the investigator and the subject provided a better understanding of the subjects and discipline, which also helped the final interpretation.
3. The subjects were relaxed and could clarify any doubt regarding the measures.

3.3.1 Administration of Tools

The tools used for the present study viz., Background Information Schedule, Self-Rating Scale, Mental Health Status Scale A scale Type-A personality pattern, Emotional Intelligence Scale for Sport Persons, and Advanced Progressive Matrices were administered in a uniform sequence. The procedure followed and the coding/tabulation of data were done as follows.

The various tests along with Background Information Schedule were distributed to the subjects followed by an oral instruction of the way to respond to each tests. The style of responding varied from one test to the other. The following were the instructions given to subjects.

3.3.1.1. Background Information Schedule

The relevant information related to the subject and their sporting experience gathered through Background Information Schedule.

3.3.1.2 Self-Rating Scale

Here, after reading the instructions you have to mark your opinion in the scale by putting a circle around any one number. There are three scales given. First one is the self-rating scale for punctuality. You have to evaluate yourself how punctual you are in your sports life. The scale is designed in such a way that there are 3 points. '1' stands for least punctuality, '3' stands for high punctuality. You are free to mark any number from one to three in order to indicate the level of punctuality. The same method is to be followed for the second scale also, but the difference lies in the fact that you have to evaluate yourself on self-practice. Self-practice refers to the practice initiated by yourself without compulsion from the part of coaches, parents and others. The same method is to be followed for the third scale also; the difference lies in the fact

that you have to evaluate yourself as a sport person. The scale is designed in such a way that there are '3' points, '1' stands for low competence and '3' stands for high competence. You are free to choose any of the three".

3.3.1.3 Mental Health Status Scale

"Some statements related to certain problems that we face in our daily life are given below. Indicate how far you agree or disagree with each statement with a '✓' mark. In the response sheet against the item number of each statement, five choices A, B, C, D and E are given. A denotes 'Strongly Agree', B for 'Agree', C for 'Undecided', D for 'Disagree' and E for 'Strongly disagree'. Give the first response comes to your mind using a tick mark".

3.3.1.4 A Scale of Type-A Personality Pattern

"This questionnaire contains 14 statements which describe certain characteristics of our behavior. Indicate whether it is true to yourself. There are two options such as , 'Yes' or 'No'. Give the first response comes to your mind using a tick '✓' mark".

3.3.1.5 Emotional Intelligence Scale for Sport Persons

"Some statements related to your sport life are given below. Read each statement carefully and indicate how far you agree or disagree with each statement. In the questionnaire against each statement, five choices such as 'Strongly Agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly disagree' are given. Give the first response comes to your mind using a tick '✓' mark".

3.3.1.6 Advanced Progressive Matrices

The test was administered following the standard procedure described in the manual for APM as given below.

The investigator gave the following instructions in Malayalam language

For this test you will be given an Answer Sheet, on which to mark all your answers, and two Test Booklets. No marks are to be made in the booklets. Look at your Answer Sheet.

Fill in the particulars at the top of the page. Remember, all your answers will be made on the answer sheet. Don't mark the green booklet in any way. Take the green booklet but -

Don't Open it.

Put your answer sheet in front of the book.

This is a test of observation and clear thinking. There are two parts to it. The second part, Set II, is the important part. The first part Set I, which you have in front of you, is quite short. It is intended to show you the method of working, or if you have seen tests of this sort before, to remind you how they work. Open your green book at the first page. You see this is No.1, and that under the heading Set I, on your record form there is a column of numbers 1,2,3,4 to 12.

Along with the instructions the investigator demonstrated the following

Held up Answer Sheet

Held up copy Set 1.

Held up answer sheet and point to Column 1.

The top part of problem 1 is a pattern with a bit cut out of it. Look at the pattern, think what the missing bit must be like to complete the pattern correctly, both along and down, and then find the right bit out of the eight bits shown below. Only one of these bits is perfectly correct No. 1 completes the pattern correctly downwards, but is wrong the other way. No. 4 is correct along, but is wrong downwards. Put your finger on the bit which is correct both ways. No. 8, is the right bit, isn't it? So the solution is No.8, and you write the figure "8" against No.1 under Set I, on your scoring form. Do that. Write the figure "8" at the side of No. 1 in the first column of your scoring form. Don't mark the green booklet.

Now turn over and do No. 2 by yourselves.

Allowed 20 seconds.

The answer of course is No. 4. See that you have put the figure "4" against No.2, (blacked in box 4) in the first column of your record form. Have you all done that?

Checked answer sheets to make sure all subjects are working in correct columns.

You will find the problems in this set soon get difficult. Whether the problems are easy or difficult, you notice that to solve them you have to use the same method of working all the time.

This is a practice set. It is not important to get them all done. The important thing is to notice how the problems develop, and learn the method of solving them. Go on with the rest by yourselves.

Stop now. Close the green booklet and place it at the side of the desk.

Allowed 5 minutes.

Take the grey booklet, Set II, but do not open it. Have you all got Set II in front of you? Don't open it yet. This is the real test. The problems in it are exactly like those you have just been doing, except that there are more of them, and they get difficult more slowly. In every problem you use the same method of working. You look along each row and decide what the missing figure is like. You look down each column and decide again, and you choose the figure you find is right both ways. When you have found it you enter it against the number of the problem under Set II, on your scoring form. Don't mark the grey booklet.

Held up answer sheet and showed where Set II begins.

You will be allowed 40 minutes. Remember it is the accuracy of your work that matters. Attempt each problem in turn and be sure to find the correct figure to complete it before

going on to the next problem which in every case becomes more difficult to solve and requires longer to check accurately. Are there any questions?

A short pause.

Open your books at the first problem.

Begin now.

Started stop watch or clock.

Allowed 40 minutes.

Everyone stop working, please.

Close your books.

3.3.2 Scoring

The collected answer sheets were first checked for incomplete responses, which were excluded from the data set. The responses which were complete in every sense were scored according to the scale as described below.

3.3.2.1 Background Information Schedule

The relevant information related to subjects and other variables gathered through Background Information Schedule were properly categorized and assigned number codes to variables such as age, sex, sport, discipline, level of participation, experience in sport , and family sport status.

3.3.2.2 Self-Rating Scale

Self-rating scales included 3 aspects viz., punctuality, self-practice and perceived self-competence. These three aspects were scored separately. The first

scale was a 3-point scale on punctuality, ranging from least punctuality to high punctuality. Hence a score of 1 was given to response '1' that is least punctual, a score of 2 to 'moderate punctual'(2), and a score of 3 to 'high punctual'(3).

Self-practice, the second scale in its kind, was also a 3-point scale ranging from 1(least self-practice), 2(moderate self-practice), and to 3(high self-practice). A score of 1, 2, or 3 was given to each of the response 1, 2, and 3 respectively.

Perceived self-competence, the third self-rating scale was a 3-point scale ranging from 1(least competent), 2(moderate competent), and to 3(high competent). A score of 1, 2, or 3 was given to each of the response 1, 2, and 3 respectively.

3.3.2.3 Mental Health Status Scale

The scoring of Mental Health Status Scale was performed as follows. A score of 5,4,3,2, or 1 was given to the category Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree respectively for the items which were positively worded and for the negative items scoring procedure was in the reverse order. A total of 72 items explaining 'attitude towards self', 'self-actualization', 'integration', 'autonomy', 'perception of reality', and 'environmental mastery' included 12 items in each domain. Maximum Score 360 and the minimum score 72.

3.3.2.4 A Scale for Type-A Personality Pattern

A score of '1' each was given to the response 'Yes' and '0' each to the response 'No'. The total of 14 items include 4 domains such as 'time urgency', 'poliphasic behaviour', 'inappropriate aggression', 'goal directions without proper planning' and it included 6,2,4,2 items related to each domain

respectively. A subject having a total score of 5 and above considered as Type-A person where as 4 and below as Type-B person.

3.3.2.5 Emotional Intelligence Scale for Sport Persons

The responses to the items of Emotional Intelligence Scale for Sport Persons had 5 point category in which a score of 5, 4, 3, 2, 1 was given to Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree respectively for the items which were positively worded and for the negative items scoring procedure was in the reverse order. A total of 30 items include 5 domains of emotional intelligence such as self-awareness, self-regulation, motivation, empathy, and social skills; and it included six items in each domain. The maximum possible total score was 150 and the minimum was 30.

3.3.2.6 Advanced Progressive Matrices

To score the obtained data, subjects' responses were checked whether it is correct or not, with the aid of scoring key. The total number of correct responses was recorded in the respective columns of the two sets. The score of SET II was considered to find out the percentile point and corresponding IQ of the subject with the help of manual.

3.3.3 Consolidation of data

The raw scores of different variables under investigation and other independent variables of each subject collected through Background Information Schedule, other inventories and tests were organized in a systematic order. Then the data were fed into a spread sheet for verification and for further statistical analysis.

3.4 Statistical analysis

The statistical techniques selected were based on the objectives set forth and hypotheses formulated for the study. The statistical techniques used are presented below:

3.4.1. Correlational analysis

The extent of relation between two variables (interval or ratio type) is described by the Pearson Product Moment Correlation Co-efficient, “ r ”. Generally the value of “ r ” ranges from -1 to +1. A negative value indicates a negative relation i.e. X decreases as Y increases. A positive value indicates a positive relation; X increases as Y increases. The statistical technique of correlation can be applied when one wants to study the relationship of one variable to another. If two variables correlate with each other, there is reason to believe in the existence of a common relationship. It may be noted, however, that cause-effect relationship can not be inferred from this information alone; additional criteria would be required (Kothari,1999).

A coefficient of correlation is a single number that tells us to what extent two things are related, or, in other words, to what extent variations in go with variation in other. In different situations it can vary from a value of +1.00 which indicates perfect positive relationship through ‘zero’ which indicate complete independence or no correlation whatever, down to -1.00, which means perfect negative correlation. In the present investigation, Pearson Product Moment Correlation (r) was used for estimating the extent of relationship existing among different variables.

3.4.2 Step wise regression analysis

Step wise regression analysis may be useful in situations where the investigator has to investigate the relative importance of a number of independent variables in determining a dependent variable.

The main objective in using this technique is to predict the value of the dependent variable (y) when the value of the independent variable (x) is given. In the present study, the technique was used to find out the combinations of variables, which best predicted mental health. The step wise method was used as it enabled the estimation of the sequential contribution of independent variables in the prediction of variance in the dependent variable.

3.4.3 Tests of Significance of mean difference

The ratio of deviation of scores from the mean or other parameter in a distribution of sample statistics, to the standard error of that distribution is designated as 't'. Usually the t-test is used to compare the difference between means of two groups. In this study t- tests were employed to find whether there is significant difference between males and females, and open and closed skill category sport persons on different variables like mental health , personality, emotional intelligence, and intelligence.

3.4.4 Three-way analysis of variance(Three-way ANOVA)

The three-way ANOVA combines seven separate hypotheses tests, each evaluating specific mean differences: the A effect, the B effect, the C effect, A×B interaction, B×C interaction, A×C interaction, and A×B×C interaction . Each of these seven tests will be based on its own F-ratio computed from the data. The seven F-ratios will all have the same basic structure. This technique consists in breaking down the total amount of variation in set of data into two components, viz: the amount which can be attributed specified causes and that amount which can be attributed to chance. It is possible to investigate any number of factors said to influence the dependent variable. The principle consists in estimating two population variances, one is based on between samples variance called the mean sum of squares between sample (MSS_B) and the other is based on within samples

variance called mean sum of squares within sample (MSS_W). The two estimates are compared with the F-ratio. The critical ratio is the ratio of MSS_B to MSS_W . In the present investigation sex, personality and various sport related variables were analysed for main and interaction effects on mental health, Type-a personality pattern, emotional intelligence and intelligence.

3.4.5 Multivariate analysis of variance (MANOVA)

Multivariate analysis of variance is an extension of bivariate analysis of variance in which the ratio of among-groups variance to within-groups variance is calculated on a set of variables instead of a single variable. This technique is considered appropriate when several metric dependent variables are involved in a research study along with many non-metric explanatory variables. In the present investigation the dependent variable includes mental health, Type-A personality pattern, emotional intelligence, and intelligence, whereas independent variables include levels of participation, experience, family sport status, levels of punctuality, levels of self-practice and perceived self-competence.

Chapter 4

Test Construction

Much evidence testifies that people who are emotionally adept – who know and manage their own feelings well and who read and deal effectively with other people's feelings – at an advantage in any domain of life, whether romance and intimate relationships or picking up the unspoken rules that govern success in organisation politics (Goleman, 1995). The world of sport is not except from this fact . Moreover, human emotions have tremendous impact in the realm of sport. Emotional arousal is necessary for peak performance. Frustrations and disappointments are inevitable in competitive activities. Anxiety and stress, as well as joy and fun, are a part of athletic life. Anger and fear do rear their heads as people clash in combative and body contact activities. General emotional excitement surrounds and is part of almost every sport situations. The cheering of the spectators, the music of the bands, the barking of the vendors, and the partisanship of parents and friends, all add to the aura of excitement and stimulate in most individuals' emotional response.

Emotions are involved in healthful living, in self-expression, in leadership and in the development of values (Frost, 1971). People with well developed emotional skills are also more likely to be content and effective in their lives, mastering the habits of mind that foster their own productivity, people who cannot marshal some control over their emotional life fight, inner battles that sabotage their ability for focused work and clear thought. *Emotional intelligence* is the ability to perceive accurately, appraise, and express emotions; the ability to access and/or generated feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth (Goleman, 1995). Exploring the ingredients of superb job performance, Goleman emphasises a common core of personal and social abilities – *emotional intelligence* .Sport has always been a passionate phenomenon requiring tremendous emotional

investment and focussed to excel. The highly charged realm of sport is identified as an excellent place to study the phenomenon of emotion and perspective.

4.1 Limitations

Since the ‘Emotional intelligence scale for sport persons’ is a self reporting inventory, all the limitations to such inventories are applicable to present scale also. While responding subjects may try to confirm to the social norms and accordingly may give responses, which are considered to be social desirable ones.

4.2 Significance of the study

The emotional intelligence scale was developed in connection with the present study. Development of a new scale to measure emotional intelligence was necessitated by the fact that a suitable scale, standardised on the present socio-cultural context and on sport population was not readily available. As emotional intelligence is very culture sensitive, the investigator considered it worth while to develop a new standardised scale for sport population.

The results from this attempt could be widely used in the following ways:

1. To assess the emotional intelligence of the sport persons.
2. To enhance the emotional intelligence of Sport persons as a professional group.
3. The new inventory can utilise in psychological support for sport persons, including individual counselling and group therapy.
4. Based on the results of the inquiry novel training modules can be developed.
5. To check the applicability of the newly emerging construct in general psychology – emotional intelligence, in the realm of sports

and to apply the rules to attain the goals of the discipline of sport psychology.

6. Enhancement of further research in the related fields such as the relationship between emotional intelligence and performance, emotional intelligence and well being etc.

‘Emotional intelligence’ sensitises us how dramatically, the topic of emotion, emotional development emotional management and emotional health has been neglected in a variety of fields. (Botteril and Brown, 2002). Clearly, sport as a field in which emotion and perspective play such a large part, we have major responsibility in studying the phenomenon and identifying important practical implications.

4.3 Definition and explanation of the terms

Emotional Intelligence - “Emotional intelligence refers to the capacity of recognising our own feelings and those of others for motivating ourselves and for managing emotions well in oneself and in one relationships” (Goleman,1998).

Goleman Describes five major aspects of Emotional Intelligence:

1. Self awareness
2. Self regulation
3. Motivation
4. Empathy
5. Social skills

Self-awareness: “Knowing what we are feeling in the moment, and using those preferences to guide our decision making; having a realistic assessment of our ability and a well-grounded sense of self-confidence”. Self-awareness is fundamental to psychological insight; this is the faculty that much of

Psychotherapy means to strengthen emotions that simmer beneath the threshold of awareness can have a powerful impact on how we perceive and react, even though we have no idea that they are at work. But once the reaction is brought into awareness – once it registers in the context – one can evaluate things anew, decide to shrug off the feelings left earlier in the day, and change one's outlook and mood. In this way emotional self-awareness is the building block of the next fundamental of emotional intelligence; bring able to shake off a bad mood.

Self-regulation: “Handling our emotions so that they facilitate rather than interfere with task at hand; being conscientious and delaying gratification to pursue goals; recovering well from emotional distress”.

Commenting on 'self-regulation' Goleman says downs as well as ups spice life, but need to be in balance in the Calculus of the heart it is the ratio of positive to negative emotions that determines the sense of well-being. It is not that people need to avoid unpleasant feelings to feel content, but rather those stormy feelings not go unchecked, displacing all pleasant moods. People who have strong episodes of anger or depression can still feel a sense of well being if they have a counter veiling set of equally joyous or happy times.

Motivation: “Using our deepest preferences to move and guide us toward our goals, to help us take initiative and strive to improve, and to preserve in the face of setbacks and frustrations”.

Goleman continues, channelling emotions toward a productive end is a master aptitude whether it be in controlling impulse and putting off gratification regulating our mood so they facilitate rather than impede thinking, motivating ourselves to persist and to try, try again in the face of set backs, or finding ways to enter flow and so perform more effectively –all bespeak the power of emotion to guide effective effort.

Empathy: “Sensing what people are feeling, being able to take their perspective, and cultivating rapport and attunement with a broad diversity of people”.

Empathy builds on self-awareness; the more open we are to our own emotions, the more skilled we will be in reading feelings. The capacity – the ability to know how another feels – comes into play in a vast array of life arenas. The absence of empathy is also telling its lack is seen in criminal psychopaths, rapist, and child molesters. People's emotions are rarely put into words; for more often they are expressed through other cues. The key to intuiting another's feelings is in the ability to read non-verbal channels.

Social skills: “Handling emotions in relationships well and accurately reading social situations and networks; interacting smoothly; using the skills to persuade and lead, negotiate and settle disputes, for co-operation and team work.

Social skills are the stuff of interpersonal polish, the necessary ingredients for charm, social success, even charisma. Those who are adept in social intelligence can connect with people quite smoothly, be astute in reading their reactions and feelings, lead and organise, and handle the disputes that are bound to flare up in any human activity.

A **scale** is a physical representation of a series of qualified values , such as the yardstick, thermometer, or a device for measuring blood pressure. A test consisting of a series of items that have been assigned quantitative ranks or values according to their difficulty as ascertained with a standardisation group (Atkinson et al ,1996).

The different steps followed in the development of scale are given below.

There was an initial pool of 125 items for the entire scale. The entire set of 150 items was given to sport scientists, psychologists, and Language experts in Malayalam for suggestions and modifications.

4.6 Administration and Method of Responding

A clear instruction in a very simple language were prepared and printed on the first page of the scale so that each subject might be able to follow them before he or she starts responding to items. Responses on the items were elicited in terms of 5 point Likert Scale, such as “strongly agree”, “agree”, “undecided”, “disagree” and “strongly disagree”. The subjects were provided with separate space on the questionnaire to mark their answers. The subject could mark his agreeableness for each item by putting a tick mark in corresponding space given for each item.

4.7 Method of Scoring

Positive and negative items were scored separately for each dimension. 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 of 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 Experts’ consultation and pre-testing of the test

The pre-testing of a new test is very important wherever it is possible. Pre-testing helps us to discover weaknesses in the instructions in the format and to establish a reasonable time limit and a desirable length of test (Singh, 1978). An initial tryout of the scale was done on a group of about 20 subjects. The scale

4.10 Samples for Item Analysis

The draft scale was given to a sample of 478 sport persons. The sample was randomly selected from different sport disciplines. According to the nature of skills involved all the disciplines were divided into two such as open skill category, and closed skill category. The break up of the sample based on sex and different skill categories is given in table 4.2

Table 4.2

Sample break up based on sex and different skill categories

Skill category	Sex		Total
	Male	Female	
Closed skill category	126	88	214
Open skill category	167	97	264
Total	293	185	478

Review of literature reveals that there are so many methods of item analysis. For the present purpose Edwards's method was applied. Items for each dimension selected separately by performing separate statistical procedures. For item analysis. All the 478 subjects were rank ordered according to the total score in the inventory. Then the top 100 and bottom 100 subjects were selected to represent the high and low emotionally intelligent groups separately. The middle group(N=278) was dropped. The performance of the high and low groups in each item was compared using t- test. According to the t- values the discriminating power of the items were identified. The higher the t-value, the higher is the discriminating power. The results of the t- test for five domains considering the corresponding items of emotional intelligence are given in the

table 4.3. a copy of draft scale is given as appendix VII and final scale as appendix V.

Table 4.3

Emotional intelligence scale for sport persons: t- values in the draft scale

Self awareness		Self regulation		Motivation		empathy		Social skills	
Item No.	t- value	Item No.	't' value	Item No.	t- value	Item No.	't' value	Item No.	t- value
2	10.283*	9	9.938*	3	10.282*	9	6.811*	9	8.471*
7	10.031*	15	8.832*	6	9.612*	10	6.672*	19	8.430*
12	9.410*	18	8.182*	9	8.489*	12	6.589*	20	7.939*
17	9.292*	10	7.976*	10	8.386*	13	6.208*	12	7.822*
22	8.842*	7	7.911*	14	8.125*	17	5.864*	6	7.661*
20	7.714*	4	7.644*	19	8.080*	20	5.641*	11	7.535*
6	7.016	2	7.623	17	7.782	2	5.475	23	7.320
9	7.003	3	7.458	11	7.590	19	5.474	21	7.012
1	6.629	11	6.737	20	7.579	1	5.135	18	6.765
3	6.628	8	6.391	16	7.449	7	4.542	10	6.724
10	5.265	1	6.359	1	6.928	8	4.165	4	6.689
13	5.176	6	6.141	5	6.905	11	4.083	2	6.335
18	5.025	12	5.662	8	6.770	14	4.070	3	6.108
19	5.021	19	5.486	7	6.738	3	3.715	13	6.043
21	4.719	21	5.312	18	6.238	5	3.269	22	6.025
16	2.941	17	5.215	4	5.890	18	3.263	17	5.972
8	2.811	16	5.156	15	5.600	16	3.131	5	5.713
11	2.778	13	4.734	21	5.564	15	2.513	7	5.525
5	2.761	22	4.723	2	4.160	6	2.499	1	5.189
14	2.418	14	3.340	12	3.990	4	0.962	15	5.183
15	2.342	20	2.683	13	3.963			8	5.009
4	1.167	5	1.867					14	4.978
								16	4.864

* Selected items

The number of items subjected to item analysis in each domain such as self-awareness, self-regulation, motivation, empathy, and social skills were 23,23,25,21, and 33 respectively. From the preliminary scale, after item analysis, items were sorted in the descending order of the t -values. Thus the top six items having high discriminative power from each domain were selected for the final scale. The t -values for all these items in the final scale are significant at 0.01 level. The final scale constitutes a total of 30 items

4.11 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. It emphasizes the proportion of true variance in total variance. The reliability of any set of measurement is logically defined as the proportion of their variance, that is, true 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.

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 scale was administered in the first half of the day in groups of 10 to 20. The assumption was that subjects would be fresh in first half of the day, and would take more interest in responding to the items of the scale. Besides, the subjects who feel unwell and suffering from any major illness or

problems were eliminated from the sample. Care was also taken to establish rapport before administering the scale.

Generally there are four methods to estimate the reliability coefficient:

1. Test – retest method
2. Equivalent form method
3. Split half method
4. Inter-item correlation method

Test-retest method or retest method required 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. Furthermore it is easier to develop one form of the test rather than two parallel forms. It is sheerly on these grounds that test reliability is extremely popular among psychometricians. In spite of its popularity, some objections have been raised against it. Shorter and longer time intervals between two administrations of the test have been found to affect the reliability. In case of time interval is shorter, subjects may recall their first answers tending to make the results of the two administrations more alike. Besides memory effects, practice and confidence as a result of familiarity with the test contents in the subjects also have been found to affect the test re-test reliability. Longer time interval such as 6 months or more has also been found to affect the reliability coefficient because it produces many psychological and physical changes in respondents. It is, therefore, ideal that a responsible time interval should give

between the first and second administration of the test so that the possible errors due to the intervening variables could be minimized.

The present scale was administered twice with a time interval of a month to a sample of 61. Pearson Product Moment correlation for *test re-test reliability* was computed between the two sets of measures and it was found to be 0.82(N=61) test re-test reliability of each sub domains are reported as self-awareness (0.50), self-regulation (0.66), motivation (0.74), empathy (0.65), and social skills (0.63).

Split-half method is another popular method of estimating reliability coefficient. It measures internal consistency of the test scores. The test is administered to a group of samples for once and then, it is divided into two equivalent halves. On the basis of correlation of these two halves, an estimate of reliability coefficient of the whole test is determined through Spearman – Brown prophecy formula.

Usually, there are two common ways of dividing of the test into two equivalent forms namely, first half versus second half method or odd versus even method. As there is usually no time limit or does the question of difficulty value of items arise in this type of tests, both methods of splitting the test have been frequently used.

Advantage of the split-half method is that the errors due to variations in the two testing situations are eliminated because all the data for computing the reliability are obtained in single administration.

For the present scale split half reliability coefficients were estimated. The scale was administered to a sample of 61. Reliability coefficients were calculated for all the five dimensions separately. The split-half reliability coefficients of the scale for different domains estimated are self-awareness

(0.76), self-regulation (0.68), motivation (0.71), empathy (0.97), social skills (0.97), and that of the entire scale is 0.87 (N=61).

4.12 Validity

Validity means truthfulness or usefulness of the test. Thus validity of a test is concerned with what the test measures and how well it measures. A test stands valid against some independent criteria. 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.

Generally validity can be classified into 3 principal categories,

1. Content
2. Criterion – related, and
3. Construct validity

For estimating validity coefficients of the present scale several approaches were taken into consideration.

Items constructed for the emotional intelligence scale for sport persons were based on dimensions of emotional intelligence given by Goleman (1995) which has sound theoretical foundation and items for the final scale were selected according to scientific item analysis techniques, it can be said that *Content Validity* is inherent in the present scale. The face validity of the scale has been assured by many experts in the field. The *predictive validity* of the scale is assured as all items in the final scale have high discriminative power revealed by the significant t-values during item analysis.

Construct validity of the scale was estimated by correlating the emotional intelligence scores with the scores of Mental Health Status Scale (Gireesan and Sam Sananda Raj, 1988). It was found that the Pearson Product Moment Correlation between these two scores is 0.488(N=304). Since, emotional intelligence is conceptualised as a construct highly related with mental health, the computed value of correlation is statistically significant ($P<0.01$) to be considered as a criterion for construct validity of the present scale.

Being an indicator of unhealthy behavior pattern, the scores on 'A scale of Type -A behavior Pattern' (Robert et. al, 1998) were correlated with the scores of emotional intelligence scale for sport persons. As predicted a statistically significant negative correlation ($-0.193, P<0.01, N=304$) was calculated. This value seems to be a clear indication of the construct validity of the newly developed scale.

Emotional intelligence is slightly and positively correlated with intelligence measured by Advanced Progressive Matrices (Raven, 1989), 0.05; which is too small to be significant, for these two constructs are largely independent entities. The trend of the relationship between emotional intelligence and intelligence is positive but insignificant; exactly the same idea has been put forward by the proponent of emotional intelligence, Goleman (1995). Altogether, it can be said that Emotional Intelligence Scale for Sport Persons has met the criteria for construct validity.

Results and discussion

This chapter presents the results found out by the investigator through statistical analysis of the data collected. Analysis is the key aspect of any research work and it is the way to test the hypothesis formulated by the investigator. The different statistical designs used in the study to explore the psychological aspects of sport persons and the results if these statistical procedures are discussed under the following sections.

- 5.1 Correlational Analysis
- 5.2 Multiple Regression Analysis
- 5.3 Multivariate Analysis of Variance (MANOVA)
- 5.4 t-Test Analysis
- 5.5 Three-Way Analysis of Variance (ANOVA)

Relationships of the variables

5.1 Correlational analysis

Correlation is a statistical technique that is used to measure and describe a relationship between two variables. By far, the most common correlation is Pearson Product Moment Correlation. It measures the degree and direction of linear relationship between two variables (Gravetter, and Wallnau, 2000). In the present investigation, relationships of variables have been established through correlation coefficients by three steps as follows:

5.1.1 Relationships among Mental health, Personality, Emotional Intelligence and Intelligence of sport persons: overall analysis.

5.1.2 Relationship among Mental health, Emotional Intelligence and Intelligence of type- A sport persons.

5.1.3 Relationship among Mental health, Emotional Intelligence and Intelligence of Type- B sport persons.

5.1.1 Relationships among mental health, personality, emotional intelligence and intelligence of sport persons: Overall analysis

Summarizing research findings on the genetic contributors to mental health, Dilalla (1998) denotes, “substantial research has demonstrated association between individual differences in temperamental characteristics and psychological adjustment, coping with stressful events, and resilience. In particular, temperamental attributes such as activity level, emotional stability versus reactivity, cognitive intellectual abilities, the ability to reflect on one's behaviour, and the degree of which one is socially responsive to others have been shown to function as protective factors in individuals at risk for developing psychological disorders”. These words reflect the conceptual inter-relatedness between the variables under study.

Hypothesis 1

Significant relationships exist among mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.

Hypothesis 1 was tested in six steps correlating two variables at a time as follows.

5.1.1.1 Relationship between mental health, and personality of sports persons.

5.1.1.2 Relationship between mental health, and emotional intelligence of sport persons.

5.1.1.3 Relationship between mental health, and intelligence of sport persons.

5.1.1.4 Relationship between personality and emotional intelligence of sport persons.

5.1.1.5 Relationship between personality and intelligence of sport persons.

5.1.1.6 Relationship between emotional intelligence and intelligence of sport persons.

5.1.1.1 Relationship between mental health, and personality of sport persons

The results of the analysis are represented as coefficient of correlation among the components of mental health and personality scores in table 5.1.

In the present investigation mental health is used as a positive aspect. Positive mental health refers to behaviors, attitudes, and feelings that represent an individual's level of personal effectiveness; success and satisfaction from the

literature it seems clear that Type-A people are at higher risk for various physical ailments. Taking this aspect for granted, it can be assumed logically that mental health and Type-A personality are related. The correlation status of these variables in a sport population is interesting as well.

Table 5.1
Correlation matrix of mental health and personality

Variables	Time urgency	Inappropriate aggression and hostility	Poliphasic behaviour	Goal directedness without proper planning	Type-A personality pattern
Attitude towards self	-0.042	-0.040	-0.005	-0.161*	-0.093
Self-actualization	0.007	0.053	0.097	-0.194**	-0.002
Integration	-0.118	-0.072	0.098	-0.270**	-0.150*
Autonomy	0.053	0.025	0.059	-0.107	0.026
Perception of reality	0.062	0.010	0.083	-0.175*	0.012
Environmental mastery	-0.085	-0.129*	0.076	-0.209**	-0.143*
Mental health	-0.035	-0.042	0.104	-0.290**	-0.095

*significant at 0.05 level **significant at 0.01 level

From table 5.1, it can be found that the first component of mental health, which can be described by terms such as self acceptance, attitude towards self, confidence and self-respect, shows a negative trend in its with all the components of Type-A personality. However, among the four, only one 'goal directedness without proper planning' is significantly correlated (-0.161) at 0.05 level which means that the tendency of sport persons to rush into work without really knowing how to accomplish the desired results and usually that ends in

incomplete work or work with many errors may be the reason for low self acceptance, low self-confidence and self-respect.

The next component, 'self-actualization' is concerned with what a person does with his/her self over a period of time. In this concept the maximum development of the basic equipment of the individual is emphasized. The matrix reveals that this aspect of mental health positively correlates with components of personality viz., 'time urgency', 'inappropriate aggression and hostility' and 'polyphasic behavior'. Coefficients are negligible and more or less equal to zero. Hence a linear relationship of these components of personality with 'self actualization' seems impossible. Again "goal directedness without proper planning" is the single component negatively correlates with 'self-actualization'. The correlation coefficient is -0.194, significant at 0.01 level. It is reasonable to brief that an aspiring sport person should develop the habit of proper goal setting.

It is clear from the matrix that, one of the components of mental health correlates significantly with total score of personality is 'Integration'. Resistance to Stress, a unifying outlook and life and a balance of psychic forces, all these are included under 'Integration'. The correlation (-0.150) between Type-A personality score and "Integration", which is negative and significant at 0.05 level means that higher the "Integration" of the person lower the possibility to be classified as Type-A. Low "Integration" also reflects the absence of cognitive aspects of 'Integration', incongruent ideas, vague thoughts etc. This aspect is related to the sport person's goal orientation. This fact is evident in a statistically significant negative correlation (-0.270) at 0.01 level between 'goal directness without proper planning' and 'integration'.

The term 'autonomy' denotes a relation between individual and environment with regard to decision making. This aspect of mental health does correlate significantly with none of the Type-A personality dimensions. A

statistically significant negative correlation is found out between 'perception of reality' and 'goal directedness without proper planning'. Being an aspect of mental health, 'perception of reality' is called mentally healthy when, what the individual sees corresponds to what is actually there. Again 'goal directedness without proper planning' stands out among the other aspects of Type-A personality with a negative correlation (-0.175) at 0.05 level of significance.

Efficiency in problem solving, capacity for adaptation and adjustment, adequacy in interpersonal relationship are some of the factors constitute 'environmental mastery' – one aspect of mental health. This aspect negatively correlates with inappropriate aggression (-0.129) with 0.05 level of significance contributes low mental health and 'goal directedness without proper at planning' (-0.209) with 0.01 level of significance. These correlations indicate the inadequacy of sport persons in problem solving, adaptation, and interpersonal relations due to inappropriate aggression and absence of proper planning.

The correlations between the total mental health score and the aspects of Type-A personality gives a clear idea about the interrelatedness between the variables. Negative correlation is found between mental health and 'time urgency', 'inappropriate aggression', 'goal directedness without proper planning' and the total score of Type-A personality. The statistically significant correlation (-0.290) between 'goal directedness is that proper planning' and mental health suggests one possibility that the tendency of the sport persons to such into work without really knowing how to accomplish the desired result may end in unwanted pressure and stress that contributes low mental health. 'Polyphasic behaviour' correlates (0.104) positively with mental health irrespective of statistical significance. It can be asserted that the tendency to under take two or more tasks simultaneously at inappropriate times positively correlates with mental health than any other components of Type-A personality. Dilalla (1998)

denotes that researchers have been extremely interested in studying "resilient" individuals to gain potential insight into how mental illness might be successfully prevented. The focus is on potential genetic influences on adaptation and resilience. To put it in another way, some individuals are prone to lack of mental health by virtue of the emotional intelligence or personality characteristics. There are aspect of empirical evidence unravel the positive relationship between Type-A personality pattern and bodily ailments – like, coronary heart disease (Hashimoto & Tsaka,1980., Neurnberger, 1981., Mattesan & Smith, 1984) and high blood pressure. In fact, many researches, clinicians and lay people have observed that physical activity enhances feelings of well being, emotional intelligence, in particular by reducing anxiety and tension and increasing vigor. It is assumed that sport persons are physically healthy, so that the psycho somatic illness related to Type-A personality pattern is least expected. The negative correlation (-0.095) found in the present investigation is an indicator that higher the score on Type-A personality lower the mental health of sport persons.

5.1.1.2 Relationship between mental health and emotional intelligence of sport persons

The concept of emotional intelligence can be used as an index of mental health, well being, and it can be advocated that this dimension of emotional intelligence may serve as a useful screening device to identify intelligent, potentially successful and mentally healthy individual (Seghal, 1999). It is rational to trace out the relations among the sub components of mental health, and emotional intelligence.

Table 5.2

Correlation matrix of mental health and emotional intelligence

Variables	Self-awareness	Self-regulation	Motivation	Empathy	Social skills	Emotional intelligence
Attitude towards self	0.172**	0.141*	0.153**	0.138*	0.163**	0.228**
Self-actualization	0.262**	0.172**	0.217**	0.171**	0.190**	0.301**
Integration	0.245**	0.257**	0.249**	0.198**	0.262**	0.363**
Autonomy	0.161**	0.184**	0.198**	0.069	0.210**	0.253**
Perception of reality	0.259**	0.146*	0.230**	0.257**	0.208**	0.324**
Environmental mastery	0.271**	0.240**	0.218**	0.299**	0.394**	0.418**
Mental health	0.354**	0.296**	0.326**	0.292**	0.371**	0.488**

*significant at 0.05 level **significant at 0.01 level

Attitude toward self is found to be correlated positively with all of the domains of emotional intelligence viz., ‘self-awareness’ (0.172), ‘motivation’ (0.153), ‘social skills’ (0.163) significant 0.01 level and ‘self-regulation’ (0.141), ‘empathy’ (0.138) Significant at 0.05 level.

The components of mental health, self-actualization integration and environmental mastery correlate with each of the domains, both positively and significantly at 0.01 level. The correlation between self-actualization and the five aspects of emotional intelligence can be read out from table 5.2 as ‘self-awareness’ (0.262), ‘self-regulation’ (0.172), ‘motivation’ (0.217), ‘empathy’ (0.171) and ‘social skills’ (0.190). Correlations between ‘environmental mastery’ and components of emotional intelligence are ‘self-awareness’ (0.271), ‘self-regulation’ (0.240), ‘motivation’ (0.218), ‘empathy’ (0.299) and ‘social skills’ (0.394).

'Integration', is another aspect of mental health is found to be highly correlated with all of the above said components of emotional intelligence. The correlation coefficients are ('self-awareness') 0.245, ('self-regulation') 0.257, ('motivation') 0.249, ('empathy ') 0.198, and (social skill) 0.262.

Among the five sub categories of emotional intelligence only one, 'empathy' stands out without any relationship (0.069) with 'autonomy' – another aspect of mental health. All the other subcategories are having significant positive relationship with 'autonomy' at 0.01 level significance viz. 'self-awareness'(0.161), 'self-regulation'(0.184), 'motivation'(0.198), and 'social skills'(0.210).

Another component, 'perception of reality', is not an exception from the general trend. This component also positively correlates significantly with 'self-awareness' (0.259), 'motivation' (0.230), 'empathy' (0.257), and 'social skills' (0.208) at 0.01 level of significance and self regulation (0.146) at 0.05 level of significance.

Since all the components of mental health are of positive aspects, each of them correlates positively with the total score at 0.01 level of significance (table 5.2). The correlation coefficient between emotional intelligence and attitude toward self is 0.228 and that of 'self-actualization', 'integration', 'autonomy', 'perception of reality' and 'environmental mastery' are 0.301, 0.363, 0.253, 0.253, 0.324 and 0.418 respectively.

A high correlation is also evident between the total score of mental health and the domains of emotional intelligence. Correlation coefficient of mental health and 'self-awareness' is 0.354, 'self-regulation' 0.296, 'motivation' 0.326, 'empathy' 0.292, and 'social skills' 0.371. All the values are significant at 0.01 level. Finally, correlation between total score of mental health and emotional

intelligence is self-explanatory; the coefficient is 0.488 significant at 0.01 level. From the results, it can be asserted with much confidence that higher the emotional intelligence higher the mental health of sport person. There is a dearth of studies that support this finding in the sport field. But a positive relationship between the same variable, have been advocated by several authors like Seghal (2001), Bar-On (1996) and Goleman(1995). In Goleman's (1995) words "it is not intelligence alone, but emotional intelligence contributes to success, happiness, life satisfaction and the feeling of well being". Emotions are important factors in the development of a healthy personality and social competence, and in the development of psychopathology. It has been noted that a person's skills in understanding and regulating emotions are more important to overall competence than IQ (Dilalla, 1998).

The concept of mental health has been described different in the literature viz., absence of mental illness and positive mental health. The present investigation, the latter point of view is employed. This concept is more related to the optimum of growth and happiness, emotional maturity, and the adjustment to the world with maximum effectiveness and happiness.(Troisi & Mc Guire, 1998).

As far as the emotional management and growth is inherent in the concept of positive mental health, it is not surprising to note that mental health is correlated with emotional intelligence.

5.1.1.3. Relationship between mental health and intelligence of sport persons

Advanced progressive matrices used in the present study measures observations capacity for clear thinking and accurate cut the actual work by the indices of IQ scores.

Table 5. 3

Correlation matrix of mental health and IQ

Variables	Intelligence
Attitude towards self	0.073
Self-actualization	0.050
Integration	0.137*
Autonomy	0.049
Perception of reality	0.070
Environmental mastery	0.005
Mental health	0.099

*Significant at 0.05 level

Saklofske (1998) gives a clear idea about the relation between intelligence and mental health. He says that a general framework for relating intelligence to mental health is provided by cognitive models of well-being and maladjustment. Broadly, well-being tends to reflect people's cognition about themselves and the social and physical worlds they inhabit. For example, depressed individuals tend to have low self-esteem, to retrieve predominantly negative memories of past events, and to commit errors in reasoning that exaggerate the negative side of life. Within this cognitive framework, there is scope for reciprocal relationship between intelligence and mental health. On the one hand, cognitions of the self may influence the development of intelligence and the behavioral expression of intelligence. Asha` (2003) has also suggested that cognitive excellence is a resource for adapting to stressful conditions and fostering mental health.

As the table 5.3 shows, there is a positive trend between IQ scores and components of mental health. Spearman's 'g' factor - single global ability- is expressed through any endeavor the individual undertakes. The positive trend of

the correlations – attitude towards self (0.073), self-actualization (0.050) ‘Integration’ (0.037), ‘autonomy’ (0.049), ‘perception of reality’ (0.070) and ‘environmental mastery’(0.005) indicates that the two variables – mental health and intelligence are not opposing forces. ‘Integration’ in cognitive aspects which is reflected in ‘integration’ correlates significantly with intelligence at significance level 0.05 shows the role of intelligence in mental health.

Dilalla (1998) explains intellectual ability as one of the genetic factors influencing mental health, which is supported by Asha (2003). She concludes her study that intelligence affects mental health of female college students. The correlation between mental health and intelligence is found to be 0.099, which is not statistically significant. The results of the present investigation could not support the former findings. However, the role of intelligence in mental health can not be discarded completely as the positive trend of the correlation coefficients suggests.

5.1.1.4. Relationship between personality and emotional intelligence of sport persons

Type-A personality pattern includes four aspects viz., time urgency, inappropriate aggression, polyphasic behaviour and goal directedness without proper planning, all of them have specific relevance in the realm of sport. People who are emotionally adopt at an advantage in any domain of life, says Goleman (1995). How these two variables-Type-A personality and emotional intelligence – operates in the life of sport persons is interesting to study.

Table 5. 4

Correlation matrix of personality and emotional intelligence

Variables	Self-awareness	Self-regulation	Motivation	Empathy	Social skills	Emotional intelligence
Time urgency	-0.110	-0.073	0.055	0.002	-0.123*	-0.107
Inappropriate aggression and hostility	-0.053	-0.169**	-0.075	-0.010	-0.127*	-0.156**
Poliphasic behaviour	0.018	0.025	0.064	0.070	0.046	0.069
Goaldirectedness without proper planning	-0.173**	-0.257**	-0.191**	-0.092	-0.222**	-0.284**
Personality	-0.133	-0.185**	-0.102	-0.047	-0.178**	-0.193**

*significant at 0.05 level

** significant at 0.01 level

The coefficients of correlation among the components of these two variables are worthwhile and explanatory too. Type-A personality pattern is characterized by a sense of time urgency. Type-A people are competitive and impatient, little distracts from their appointed task. Their impatience may dampen interpersonal relations with their coaches, other athletes etc.

A significant negative correlation (-0.123) between time urgency and social skills at 0.05 level reveals the above stated. Impairment in the social skills is justified by high correlations between inappropriate aggression (-0.127) and goal directedness without proper planning (-0.222), are significant at 0.05 and 0.01 level respectively.

The incomplete work or the excess of errors due to lack of proper planning may lead to frustration and excess pressure due to time constrictions. The frustrated athlete is likely to behave with inappropriate aggression. Any type of inappropriate aggression has the impetus to decay social relations with coaches, other athletes or team mates.

All of our biological and biosocial systems participate in the formation of the self-system and the super system termed personality. The emotional system and the cognitive system manifest themselves most prominently. The forming of connections and relations between emotion, feelings and thoughts constitutes a major part of personality development. These feelings, thought or affective-cognitive structures reveal themselves as attachments, values, and goals. Through biological and social development, they also become organized as traits of personality. A number of studies have showed robust relationships between specific patterns of emotions and particular traits or broad dimensions of personality on the one hand and personality disorders on the other. For example, social interest and joy are part of extroversion, and the apparent absence of shame and guilt is a characteristic of antisocial personality disorders. (Dilalla, 1998).

Examining the link between emotional intelligence and interpersonal relations, Schutte (2001) was able to find positive correlation between emotional intelligence and social skills as well as with empathic perspective taking and self-monitoring in social situations.

Social intelligence appears to play a principal role in leadership, conclude Kobe et al. (2001) by analysing self reported leadership experiences in relation to social and emotional intelligence.

Karen and Sandy (2001) gathered evidence of problems in 'social skills' through anecdotal records and observational checklist. Analysis of probable cause data revealed that students demonstrated lack of emotional intelligence that inhibited the development of social competence. Another characteristic of Type-A behavior pattern is inappropriate aggression. While discussing 'self-regulation' Goleman(1995) says that anger is the mood, people are worst at controlling is the most seductive of the negative emotions. It is evident from the present

investigation that statistically significant negative correlation ($-0.169, P < 0.01$) exists between 'self-regulation' and inappropriate aggression (table 5.4).

The tendency to undertake two or more tasks simultaneously at inappropriate times is indicative of "polyphasic behaviour" of Type-A persons. This is the lone characteristic, which correlates positively with all of the domains of emotional intelligence. Nevertheless, all the coefficients are statistically insignificant. The low values of correlation coefficients ('self-awareness', 0.018, 'self-regulation's 0.025, 'motivation' 0.064, 'empathy' 0.070, and 'social skills' 0.046) reflect negligible relation of polyphasic behaviour with emotional intelligence. All the domains of emotional intelligence, but 'empathy' have significant negative correlation with 'goal directedness without proper planning' a characteristic of Type-A person. Since emotional intelligence is considered as major contributing factor in life success (Goleman, 1995), it can be stressed that work without planning is no way helpful to success in sport. On the other hand, proper goal setting is inevitable for success in sport life. The possibility that higher the scores on Type-A personality lower the emotional intelligence of sport person is suggestive by the correlation coefficient (-0.193) between personality and emotional intelligence significant at 0.01 level. A window of opportunity to change the scores on emotional intelligence is possible with appropriate control over aggression and goal setting since the correlation between emotional intelligence and inappropriate aggression is -0.156 and that of 'goal directedness without proper planning' is -0.284 . Both the values are significant at 0.01 level.

5.1.1.5. Relationship of personality and intelligence of sport persons

Though Type-A personality pattern does not correlate with mental health of sport persons, it has significantly negative correlation (-0.134) at 0.05 level with intelligence.

Table 5.5

Correlation matrix of personality and intelligence

Variables	Intelligence
Time urgency	-0.101
Inappropriate aggression and hostility	-0.023
Poliphasic behaviour	-0.067
Goaldirectedness without proper planning	-0.141*
Personality	-0.134*

*Significant at 0.05 level

The measure of observation and clear thinking negatively correlates with all the characteristics of Type-A personality (table 5. 5), eventhough it is found that only ‘goal directedness without proper planning’ has significant correlation (-0.141) with intelligence. One can find possible relation of inability to observe and think clearly with the sport person’s difficulty with proper planning and execution of specific strategies and tactics.

Sreekumar and Mathew (2003) explored the extent of association that the personality dimensions are having with Intelligence and quality of social interaction in the case of adolescent students. The results show that Inertia, one of the personality dimensions, has a significant negative correlation with Intelligence. Activation, another dimension has a positive correlation with intelligence only in the case of boys. Stability has a positive correlation with quality of social interaction only in the case of girls. Boys and girls differ significantly in Inertia and Activation. The results show that boys are having more Activation while girls are having more Inertia.

5.1.1.6. Relationship between emotional intelligence and intelligence of sport persons

Intellect cannot work at its best without emotional intelligence (Goleman, 1995) intelligence and emotional intelligence are not opposing competencies but rather separate ones.

Table 5. 6

Correlation matrix of emotional intelligence and intelligence

Variables	Intelligence
Self-awareness	0.045
Self-regulation	0.074
Motivation	0.107
Empathy	-0.048
Social skills	-0.035
Emotional intelligence	0.052

The correlation between emotional intelligence and intelligence revealed by the present investigation is 0.052. Through there is a positive relationship it is not statistically significant. None of the subcomponents of emotional intelligence correlates significantly with intelligence. (table 5.6)

Correlation between intelligence and 'self-awareness' is 0.045, that of 'self-regulation' is 0.074 and 'motivation' is 0.107. All these correlations are positive suggesting nominal increment corresponding to the increase of intelligence. Where as 'empathy' (-0.048) and 'social skills' (-0.035) correlate negatively with intelligence proposing a decrease in those variables as the intelligence increased. Altogether it can be asserted that emotional intelligence is

slightly correlated with intelligence (0.052); which is too small to make clear predictions for these are largely independent entities. Exactly the same idea has been put forward by the proponent of emotional intelligence, Goleman. In his words “We all mix intellect and emotional acuity. People with high intelligence, but low emotional intelligence or low intelligence and high emotional intelligence are relatively rare”. The status of relationship between emotional intelligence and intelligence in the realm of sport is not much different from that of general population.

Goleman argues that emotional intelligence can predict success more than intelligence. A study by Samuel et al. (2003) explore the relationship between emotional intelligence and actual performance in sport. The data suggests that components or skills of emotional intelligence are moderately related to Base ball performance. But Victor and Higgs (2000) provide support for the proposition that the combination of emotional intelligence and intelligence is a more powerful predictor of “success’ than either measure alone.

The authors, Lam, and Kirby (2002) found that overall emotional intelligence, emotional perception, emotional regulation uniquely explained individual cognitive – based performance over and beyond the level attributable to general intelligence.

In another study, individual differences in the ability to connect thoughts to emotions were studied. Findings are interpreted to mean that same forms of emotional problem solving require emotional openness as well as general intelligence (Mayer and Geher, 1996).

Goleman (1995) comments on the relationship between IQ and emotional intelligence, that they are not opposing competencies, but rather separate ones. He adds one of the psychology’s open secrets is the relative inability of grades,

IQ, or SAT scores, despite their popular mystic, to predict unerringly who will succeed in life. He concludes that the academic intelligence has little to do with emotional life. Somewhat similar idea has been echoed by Zee et al. (2002); they examined the relationship of self and other ratings of emotional intelligence with academic intelligence and personality as well as the incremental validity of emotional intelligence beyond academic intelligence and personality in predicting academic and social success. Little evidence was found for a relationship between emotional and academic intelligence. Academic intelligence was low and inconsistently related to emotional intelligence, revealing both negative and positive interrelations.

In spite of the claims of popular authors, Mayer et al, (1999) do not believe that emotional intelligence will prove to be twice as important as analytic intelligence in predicting success. What research does exist, however, suggests that emotional intelligence is likely to take its place along side other important psychological variables as an important predictor of performance at school, home and work.

Hypothesis 1 is partially accepted on the basis of above findings.

5.1.2. Relationship among mental health, emotional intelligence and intelligence of Type-A sport persons

Most of the articles on aspects of sport personality published during the 1960's and 1970's, voluminous research demonstrates how important researches and practitioners consider the role of personality to be in sport settings (Weinberg and Gould, 1999). Type-A personality pattern, which is the focus of present research, distinguishes a group of individuals as having specific behavior patterns from the rest of the population.

Type-A individuals, as they are called, are prone to psychosomatic illness due to their specific life style. They are described to possess traits such as impatience, aggressiveness, a sense of time urgency, and the desire to walk, eat and perform most activities rapidly and perfunctorily. The rest of the population Type-B includes all the persons except Type-A. Friedman and Rosenman define Type-A personality as “An action – emotion complex that can be observed in any person who is aggressively involved is a chronic, incessant struggle to achieve more and more is less and less time”

The Following are the reasons why the investigator analyzed the correlational status of the variables, mental health, emotional intelligence and intelligence – on different personality Types: Type- A and Type- B.

The characteristics of Type-A personality pattern are particularly relevant in sport domain, e.g. time urgency, goal directedness, aggression etc.

1. Type-A personality pattern is related with psychosomatic illness and stress where mental health plays a key role.
2. Type-A personality, which is related with physical ill health, has special significance for sport persons who strive hard for physical fitness.
3. Above all, from the primary analysis it is found that 74.12% at the sport persons under study is Type-A person. (table 3.9)

Hypothesis 2

Significant relationships exist among mental health, emotional intelligence and intelligence of Type-A sport persons.

The hypothesis 2 was tested in three steps as follows:

5.1.2.1 Relationship between mental health and emotional intelligence of Type-A sport persons.

5.1.2.2 Relationship between mental health and intelligence of type-A sport persons.

5.1.2.3 Relationship between emotional intelligence and intelligence of Type-A sport persons.

5.1.2.1 Relationship between mental health and emotional intelligence of Type-A sport persons

The intercorrelations among the components of mental health and emotional intelligence are shown in table 5.7

Table 5.7
Correlation matrix of mental health and emotional intelligence of
Type-A sport persons

Variables	Self-awareness	Self-regulation	Motivation	Empathy	Social skills	Emotional intelligence
Attitude towards self	0.54*	0.196**	0.151*	0.149*	0.155*	0.234**
Self-actualization	0.256**	0.191**	0.213**	0.186**	0.240**	0.316**
Integration	0.251**	0.329**	0.259**	0.228**	0.306**	0.401**
Autonomy	0.192**	0.223**	0.180**	0.043	0.238**	0.261**
Perception of reality	0.272**	0.268**	0.245**	0.253**	0.236**	0.252**
Environmental mastery	0.293**	0.273**	0.230**	0.296**	0.425**	0.436**
Mental health	0.350**	0.361**	0.323**	0.293**	0.405**	0.506**

*Significant at 0.05 level **Significant at 0.01 level

A clear picture of the correlations is prominent in table (5.7). Except the relationship between autonomy and empathy, all the sub components of mental health are significantly related to all of the domains of emotional intelligence, at least at 0.05 level of significance. A high Pearson Product Moment Correlation Coefficient (0.506) is estimated which is significant at 0.01 level i.e., higher the emotional intelligence of Type-A sport persons higher the mental health.

5.1.2.2 Relationship between mental health and intelligence of Type-A sport persons

Table 5.8

Correlation matrix of mental health and intelligence of Type-A sport persons

Variables	Intelligence
Attitude towards self	0.111
Self-actualization	0.099
Integration	0.179**
Autonomy	0.036
Perception of reality	0.121
Environmental mastery	0.076
Mental health	0.159*

*Significant at 0.05 level **Significant at 0.01 level

Correlation Coefficient (0.159) of the relationship between mental health and IQ of Type-A sport person (table 5.8) is positive and significant at 0.05 level. Only one component of mental health that positively correlates with IQ scores is 'Integration'. All the other relations are positive without statistical significance.

5.1.2.3 Relationship between emotional intelligence and intelligence of Type-A sport persons

Table 5.9

Correlation matrix of emotional intelligence and intelligence of Type-A sport persons

Variables	Intelligence
Self-awareness	0.062
Self-regulation	0.078
Motivation	0.076
Empathy	-0.045
Social skills	-0.003
Emotional intelligence	0.055

Some of the dimensions of emotional intelligence ('self-awareness'0.062, 'self-regulation'(0.078, and 'motivation'0.076) are positively related with IQ scores and some other domains ('empathy' -0.045, and 'social skills' -0.033) are negatively related with IQ scores, all these values are not statistically significant, however (table 5.9). Correlation coefficient between the total scores emotional intelligence and IQ of Type-A sport person is not statistically significant. Regarding the above results hypothesis 2 is partially accepted.

5.1.3 Relationship among mental health, emotional intelligence and intelligence of Type-B sport persons

Hypothesis 3.

Significant relationships exist among mental health, emotional intelligence and intelligence of Type-B sport persons.

Hypothesis 3 was tested in three steps as follow:

- 5.1.3.1. Relationship between mental health and emotional intelligence of Type-B sport persons
 - 5.1.3.2. Relationship between mental health and intelligence of Type-B sport persons
 - 5.1.3.3 Relationship between emotional intelligence and intelligence of Type-B sport persons.
- 5.1.3.1 Relationship between mental health and emotional intelligence of Type-B sport persons**

Table 5.10

Correlation matrix of mental health and emotional intelligence of Type-B sport persons

Variables	Self-awareness	Self-regulation	Motivation	Empathy	Social skills	Emotional intelligence
Attitude towards self	0.263*	-0.138	0.169	0.072	0.208	0.195
Self-actualization	0.288*	0.113	0.241*	0.112	0.000	0.251*
Integration	0.215	-0.081	0.211	0.056	0.063	0.160
Autonomy	0.077	0.115	0.283*	0.171	0.141	0.273*
Perception of reality	0.227	-0.035	0.166	0.283*	0.128	0.245*
Environmental mastery	0.196	0.116	0.181	0.329**	0.285*	0.361**
Mental health	0.347**	0.037	0.349**	0.291**	0.232*	0.418**

*Significant at 0.05 level **Significant at 0.01 level

All the domains of emotional intelligence, but 'self-regulation' has positive relationship with mental health of Type-B sport persons, correlation coefficients are significant at least 0.05 level (table 5.10). Self-actualization, 'autonomy', 'perception of reality' and environmental mastery are the three aspects of mental health that correlate with total scores of emotional intelligence. It can be asserted that emotionally intelligent Type-B sport persons are mentally healthy too. Correlation between the variables is 0.418, which is significant at 0.01 level. Other significant correlations are self-actualization and 'motivation' (0.241), 'autonomy' and 'motivation' (0.283), 'perception of reality' and 'empathy' (0.283), 'environmental mastery' and 'empathy' (0.329), 'environmental mastery' and 'social skills' (0.285). All these relations are at least significant 0.05 level.

5.1.3.2 Relationship between mental health and intelligence of Type-B sport persons

Table 5.11

Correlation matrix of mental health and intelligence of Type-B sport persons

Variables	Intelligence
Attitude towards self	-0.050
Self-actualization	-0.077
Integration	0.011
Autonomy	0.100
Perception of reality	-0.043
Environmental mastery	-0.172
Mental health	-0.067

Neither the subcomponents, nor the total score of mental health significantly correlated with each other, correlation coefficient between mental health and intelligence was computed as -0.067 (table 5.11).

5.1.3.3 Relationship between emotional intelligence and intelligence of Type-B sport persons

Table 5.12

Correlation matrix of emotional intelligence and intelligence of Type-B sport persons

Variables	Intelligence
Self-awareness	-0.009
Self-regulation	0.043
Motivation	0.234*
Empathy	-0.060
Social skills	-0.147
Emotional intelligence	0.039

*Significant at 0.05 level

Significant positive relationship computed between 'motivation' and intelligence is 0.234, significant at 0.05 level (table 5.12).

All the other combinations including total score of emotional intelligence and intelligence are not significant is the case of Type-B sport persons.

Hypothesis 3 is partially accepted considering the above results.

5.1.3.4 A comparison of the nature of relationship among the variables mental health, emotional intelligence and intelligence of Type-A and Type-B sport persons

As mentioned in introduction of the ongoing discussion the relevance of studying Type-A personality in sport settings becomes more important when it is compared with the differences between the correlations among the variables, mental health, emotional intelligence and intelligence of Type-A and Type-B sport persons.

Sehgal's (1999) study attempted to investigate relationships among emotional intelligence (EQ), based on Goleman's concept), intelligence, (IQ), psychological wellbeing and Eysenckian personality dimensions. The results showed a moderate significant positive correlation between EQ & IQ dimensions. Psychological well being also showed highly significant positive correlation with EQ. However none of the Eysenckian personality dimensions were related to EQ. These latter findings are contrary to prior research. Most of previous researches have linked personality with emotional experiences, (Izard et al., 1998). Theoretically one would have expected a positive correlation between Extraversion and EQ and negative correlations between Neuroticism, Psychoticism and EQ. However Israeli psychologist, Reuven Bar-On (1996) who made the first commercially available test to measure 'EQ' defined emotional intelligence as 'capabilities', competencies and skills that influence one's ability in succeed in coping with environmental demands and pressures which directly affect one's overall 'Psychological Well-Being'. As proposed by Goleman (1995) and Reuven Bar-On (1996), EQ was related positively with Psychological well being among adolescents.

Bar-On (1996) also reported low insignificant correlations between EQ dimensions of his test and Eysenckian dimensions of Personality. May be

conceptually Personality and well-being represent distinct constructs. Personality traits are stable patterns of behaviour, whereas well-being is a desirable psychological state which may change in response to life's achievements.

Sehgal concludes that concept of EQ can go a long way in being used as an index of Well-Being, mental health and it can be advocated that this dimension of emotional intelligence may serve as a useful screening device to identify intelligent, potentially successful and psychologically and mentally healthy individuals.

A study by Verma and Alka (2003) aimed to examine the emotional intelligence among college students and their relationship to their general well being. High and low EI group differed significantly on their intelligencer general well being. The male and female students, who scored higher on emotional intelligence scored significantly higher for general well-being.

An overview of the relationship between mental health and emotional intelligence of Type B sport persons in comparison with their Type-A counterparts, in the present investigation, shows a slight distinction in the way they correlate. As discussed earlier all the components of mental health correlates with the domains of emotional intelligence in all the possible combinations with a single exception of 'autonomy' and 'empathy' in the case of Type-A sport persons. In the case of Type-B sport persons, one interesting finding is that 'self-regulation', a domain of emotional intelligence does not correlate with mental health, even though all the other domains are highly correlated with mental health as in the case of Type-A sport persons. One might find reasons for the absence of interrelated ness between mental health and 'self-regulation'. As seen in the matrix (table 5.10) out of six components of mental health, three of them self-actualization, 'autonomy', and 'environmental mastery'-correlate positively

with 'self-regulation' while other three components of mental health – attitude towards self, 'Integration' and 'perception of reality' correlate negatively with 'self-regulation'. This incongruence might contribute to the absence of significant relation in either direction.

It is interesting to note that mental health is correlated with intelligence positively and significantly in Type-A sport persons, whereas there is no such relation found between mental health and IQ of Type-B sport persons. Since Type-A persons strive to achieve more and more in less and less time, they have to think and plan properly, cognitive 'integration' is needed for the same. That may be the reason to have significantly positive relationship (0.179) between 'Integration' and IQ of Type-A sport persons, which results in the significant positive correlation between mental health and IQ of the same group.

But in the case of Type-B sport persons such an excessive achievement orientation is absent and they are not in much need of such a cognitive 'integration' and hence a poor correlation between mental health and IQ.

In both the cases Type-A and Type-B, emotional intelligence and intelligence are not significantly correlated. The 'motivation' of Type-B sport person is correlated positively and significantly at 0.05 level with intelligence. So it can be asserted that intelligent Type-B persons possess high 'motivation'.

5.1.3.5 The results of correlational analysis: an overview

To measure the degree and direction of linear relationship among the variables mental health, type-A personality pattern, emotional intelligence, and intelligence variables correlation coefficients established. Apart from the overall analysis, correlation coefficients were found out separately for type-A and type-B sport persons. The major results can be briefed as follow.

Relationships of the variables among sport persons

1. The variable Attitude towards self, a component of mental health is positively related to self-awareness, Self-regulation, motivation, empathy, social skills, and over all emotional intelligence while the same variable is negatively related to goal directedness without proper planning.
2. The variable self-actualization, a component of mental health is positively related to self-awareness, Self-regulation, motivation, empathy, social skills, and over all emotional intelligence while the same variable is negatively related to goal directedness without proper planning.
3. The variable integration, a component of mental health is positively related to self-awareness, Self-regulation, motivation, empathy, social skills, over all emotional intelligence and intelligence while the same variable is negatively related to goal directedness without proper planning and type-A personality pattern
4. The variable autonomy, a component of mental health is positively related to self-awareness, Self-regulation, motivation, social skills, over all emotional intelligence
5. The variable perception of reality, a component of mental health is positively related to self-awareness, Self-regulation, motivation, empathy, social skills, overall emotional intelligence and while the same variable is negatively related to goal directedness without proper planning.
6. The variable environmental mastery, a component of mental health is positively related to self-awareness, Self-regulation, motivation, empathy, social skills, over all emotional intelligence and while the same variable is negatively related to goal directedness without proper planning and type-A personality pattern
7. Overall mental health is positively related to self-awareness, Self-regulation, motivation, empathy, social skills, over all emotional

intelligence and while the same variable is negatively related to goal directedness without proper planning.

8. The variable time urgency, a component of type-A personality pattern is negatively related to social skills.
9. The variable inappropriate aggression and hostility, a component of type-A personality pattern is negatively related to self-regulation, social skills and over all emotional intelligence.
10. The variable, goal directedness without proper planning a component of type-A personality pattern is negatively related to self-awareness, self-regulation, motivation, social skills, over all emotional intelligence and intelligence.
11. The variable type-A personality pattern, is negatively related to self-regulation, social skills, over all emotional intelligence and intelligence.

Relationships of the variables among type-A sport persons

1. The variable Attitude towards self, a component of mental health is positively related to self-awareness, self-regulation, motivation, empathy, social skills, and over all emotional intelligence.
2. The variable self-actualization, a component of mental health is positively related to self-awareness, self-regulation, motivation, empathy, social skills, and over all emotional intelligence.
3. The variable integration, a component of mental health is positively related to self-awareness, self-regulation, motivation, empathy, social skills, over all emotional intelligence and intelligence.
4. The variable autonomy, a component of mental health is positively related to self-awareness, self-regulation, motivation, social skills, over all emotional intelligence.

5. The variable perception of reality, a component of mental health is positively related to self-awareness, self-regulation, motivation, empathy, social skills, and over all emotional intelligence.
6. The variable environmental mastery, a component of mental health is positively related to self-awareness, self-regulation, motivation, empathy, social skills, and over all emotional intelligence.
7. Overall mental health is positively related to self-awareness, self-regulation, motivation, empathy, social skills, over all emotional intelligence and intelligence.
8. Motivation, a component of emotional intelligence is positively related to intelligence.

Relationships of the variables among type-B sport persons

1. The variable Attitude towards self, a component of mental health is positively related to self-awareness.
2. The variable self-actualization, a component of mental health is positively related to self-awareness, motivation, and over all emotional intelligence.
3. The variable autonomy, a component of mental health is positively related to motivation, over all emotional intelligence.
4. The variable perception of reality, a component of mental health is positively related to empathy, and over all emotional intelligence.
5. The variable environmental mastery, a component of mental health is positively related to empathy, social skills, and over all emotional intelligence.
6. Overall mental health is positively related to self-awareness, motivation, empathy, social skills, and overall emotional intelligence.

5.2 Multiple regression analysis

This part of the analysis has been done with the view to find out the predictor variable, which may best predict sport persons' mental health. The technique followed for the same is step-wise regression analysis (by ANOVA approach) for which computation was done with the help of computer package SPSS.

Multiple regression analysis was performed to get a better understanding of the variables that contribute to mental health of sport persons. The predictor variables that were subjected to the analysis included sub domains emotional intelligence, components of Type-A personality pattern and intelligence as follows:

1. *Emotional intelligence*
 - a. Self-awareness
 - b. Self-regulation
 - c. Motivation
 - d. Empathy
 - e. Social skills
2. *Type-A personality pattern*
 - a. Time urgency
 - b. Inappropriate aggression
 - c. Goal directed without proper planning
 - d. Polyphasic behavior
3. *Intelligence*

Hypothesis 4

Mental health of sport persons can be predicted by means of predictor variables, Type-A personality pattern, emotional intelligence and intelligence.

Predictors of mental health

Six out of the ten predictor variables showed significant relationship with mental health and the values of 'r' range between 0.290 to 0.488(table 5.13).

Table 5.13.

Correlation coefficients between criterion and predictor variables

Sl. No	Predictor variables	r
1	Time urgency (X_1)	-0.035
2	Inappropriate aggression (X_2)	-0.042
3	Goal directed without proper planning (X_3)	-0.290**
4	Polyphasic behavior (X_4)	0.104
5	Self-awareness (X_5)	0.354**
6	Self-regulation (X_6)	0.296**
7	Motivation (X_7)	0.326**
8	Empathy (X_8)	0.292**
9	Social skills (X_9)	0.371**
10	Intelligence (X_{10})	0.099

**significant at 0.01 level

The indices of correlation reported in table 4.3.1 above, indicate that the predictor variable Social skills (X_9) has highest correlation ($r = 0.371, P < 0.01$) with the criterion variable. The result of the step1 analysis is given in table 5.14

Table 5.14
Results of step 1 regression analysis

Variable entered : X_9				
Multiple Correlation (R) : 0.371				
Percentage variation ($R^2 \times 100$) : 13.75				
Beta (β_9) : 0.371				
B_9 : 1.728				
SE_{B_9} : 0.249				
Constant : 5.110				
Source	DF	SS	MSS	F
Total	303			
Regression	1	14382.217	14382.217	48.115
Residual	302	90272.754	298.916	($P < 0.01$)

The results shown in table 5.14. suggest that the percentage variance accounted for the variable social skills (X_9) in predicting sport person's mental health is 13.75. That is, the multiple correlation (R) is found to be 0.371 which means that the best predictor of mental health of sport person is one of the components of emotional intelligence i.e. social skills, which alone could account for a total of 13.75% of explained variance.

The 'B' weight of the variable for the regression equation is 1.728. The standard error of 'B' is 0.249. The positive 'B' weight (1.728) of the variable X_9 indicates that the higher the scores on social skills the higher the mental health of sport persons.

Here $F = 48.115$ ($P < 0.01$).

It is therefore to be concluded that the regressor X_9 is significant in predicting the criterion variable as the table value is less than the calculate F-value(48.115).

The equation to the regression line in this case is:

$$Y = 1.728 X_9 + 5.110$$

Step 2

Next important variable that was entered into the equation, in step 2, was self awareness (X_5). On the other hand, the predictor variable having second highest partial correlation is self awareness. The results of the analysis are shown in table 5.15

Table 5.15
Results of step 2 regression analysis

Variable entered	:	X_9 and X_5
Multiple Correlation (R)	:	0.446
Percentage variation ($R^2 \times 100$)	:	19.9
Beta ₉ (β_9)	:	0.286
B_9	:	1.334
SE_{B9}	:	0.254
Beta ₅ (β_5)	:	0.262
B_5	:	1.557
SE_{B5}	:	0.324
Constant	:	7.558

Source	DF	SS	MSS	F
Total	303			
Regression	2	20821.396	10410.698	37.379
Residual	301	83833.576	278.517	(P<0.01)

The results of the step 2 analysis reveals that the variable 'self awareness' contributes an additional 6.15% of explained variance, that is by adding X_5 with X_9 , R has changed from 0.371 to 0.446 and hence the percentage variance raised from 13.75 to 19.90

Here $F = 37.379$ ($P < 0.01$)

This says that the regressor X_5 is also significant in predicting mental health, since the F-value exceeds the tabled F-value.

The 'B' weight of the variable X_9 is found to be 1.334. the standard errors of B_5 and B_9 are 0.324 and 0.254 respectively.

The equation to the regression line for predicting mental health of sports persons can be written as:

$$Y = 1.334 X_9 + 1.557 X_5 + 7.558$$

Step 3

Another predictor variable that was entered into the equation was X_7 i.e., motivation. The results of the analysis are shown in table 5.16

Table 5.16
Results of step 3 analysis

Variables entered	:	X_9 , X_5 and X_7
Multiple Correlation (R)	:	0.487
Percentage variation ($R^2 \times 100$)	:	23.70
Beta ₉ (β_9)	:	0.207
B ₉	:	0.745
SE _{B9}	:	0.192
Beta ₅ (β_5)	:	0.243
B ₅	:	1.446
SE _{B5}	:	0.318
Beta ₇ (β_7)	:	0.224
B ₇	:	1.046
SE _{B7}	:	0.259
Constant	:	7.649

Source	DF	SS	MSS	F
Total	303			
Regression	3	24806.093	8268.698	31.066
Residual	300	79848.878	266.163	(P<0.01)

The results of the step 3 analysis reveal that when a third variable, i.e. motivation (X_7) is entered, R becomes 0.487 with a percentage variance of 23.7. This variable accounted for an additional 3.8% of explained variance.

As the variable X_7 is added to X_9 and X_5 , the multiple correlation is raised from 0.446 to 0.487. The F- ratio is found to be 31.066, which is significant at 0.01 level, suggesting that X_7 is also significant in predicting mental health of sport persons.

The 'B' weight of the variables X_9 , X_5 , and X_7 are 0.745, 1.446, and 1.046 respectively.

The equation to the regression line for predicting mental health by means of predictor variables X_9 (social skills), X_5 (self-awareness), and X_7 (motivation) can be written as :

$$Y = 0.745 X_9 + 1.446 X_5 + 1.046 X_7 + 7.649$$

Step4

So far the predictor variables entered into the regression equation were components of emotional intelligence. The forth and last variable added to the equation is a component of Type-A personality pattern i.e. goal directedness without proper planning (X_3). The results of the analysis are given in table 5.17.

Table 5.17
Results of step 4 analysis

Variables entered	:	X_9, X_5, X_7 and X_3		
Multiple Correlation (R)	:	0.514		
Percentage variation ($R^2 \times 100$)	:	26.40		
Beta ₉ (β_9)	:	0.199		
B ₉	:	0.927		
SE _{B9}	:	0.258		
Beta ₅ (β_5)	:	0.266		
B ₅	:	1.343		
SE _{B5}	:	0.314		
Beta ₇ (β_7)	:	0.186		
B ₇	:	0.699		
SE _{B7}	:	0.191		
Beta ₃ (β_3)	:	-0.171		
B ₃	:	-4.565		
SE _{B3}	:	1.376		
Constant	:	8.089		
Source	DF	SS	MSS	F
Total	303			
Regression	4	27641.415	6910.354	26.829
Residual	299	77013.555	257.570	(P<0.01)

As the table shows the addition of the variable X₃ increases 'R' from 0.487 to 0.514. The percentage variance is also increased from 23.7 to 26.40 by which the variable X₃ accounts for an additional 2.7% of explained variance. The F- ratio is found to be 26.829 which is significant at 0.01 level, revealing the significance of variable goal directedness without proper planning (X₃) in predicting mental health of sport persons.

The 'B' weight of the variables X₉, X₅, X₇ and X₃ are 0.699, 1.343, 0.927 and -4.565 respectively. The negative 'B' weight (-4.565) of the variable X₃ indicates that the lower the scores on "goal directedness without proper planning" the higher the mental health of sports persons. The beta coefficients and the standard errors of the variables X₉, X₅, X₇ and X₃ are 0.199, 0.266, 0.186, and -0.171; and 0.258, 0.314, 0.191, and 1.371 respectively.

Regarding these values the equation to the regression line for predicting mental health by means of predictor variables X₉ (social skills), X₅ (self-awareness), X₇ (motivation), and X₃ (goal directedness without proper planning) can be written as:

$$Y = 0.699 X_9 + 1.343 X_5 + 0.927 X_7 + (-4.565) X_3 + 8.089$$

The picture emerges from the regression analysis is that a sport person who is more efficient in handling inter personal relations with coaches, teammates, or other important individuals, having insight into his own emotional world, and motivated to accomplish specific goals with proper planning, and devoid of impulsive actions is more likely to be mentally healthy.

Based on the above findings hypothesis 4 is accepted.

5.2.1 Results of regression analysis: an overview

Multiple regression analysis was performed to get a better understanding of the variables that contribute to mental health of sport persons. The predictor variables that were subjected to the analysis included sub domains of emotional intelligence, components of Type-A personality pattern and intelligence.

In an overview it is identified that the variables which predicts mental health of sport persons are:

1. Social skills
2. Self-awareness
3. Motivation, and
4. Goal directedness with out proper planning.

The variables social skills, self-awareness, and motivation are components of emotional intelligence that are positively related to mental health while goal directedness with out proper planning, one aspect of type-A personality pattern is negatively related to mental health.

Influence of sport related variables
on mental health, Type-A
personality pattern, emotional
intelligence and intelligence

5.3 Multivariate analysis of variance (MANOVA)

In the present investigation the total sample of sport persons could be classified into different categories according to the categorical variables viz,

1. Levels of participation (LOP) - 3 categories: State, National, and International.
2. Level of experience (LOE) - 3 categories: Novice players, moderately experienced, and highly experienced.
3. Family sport states (FSS) - 3 categories: Poor family sport status, Moderate family sport status, Sound family sport status.
4. Punctuality (P) - 3 categories: Low punctual, Moderate punctual, and High punctual
5. Self-practice (SP) - 3 categories: Low self-practice, Moderate-self practice, High self-practice
6. Perceived self-competence (SC) - 3 categories: Low perceived self-competence, Moderate perceived self-competence, and High perceived self-competence.

All the above said categorical variables were taken as independent variables and the continuous variables were taken as dependent variables. Six separate one-way MANOVAs were employed for each of the categorical variable. The categorical variables entered for MANOVA were mental health and its components, Type-A personality pattern and its components, emotional intelligence and its domains and finally intelligence as follows:

1. Mental Health (MH): attitude towards self (A), self-actualization (B), integration(C), autonomy (D), perception of reality (E), environmental mastery (F).

2. Type-A personality pattern (PT): time urgency (TU), inappropriate aggression (IA), goal directedness with out proper planning (GP), polyphasic behavior (PB).
3. Emotional Intelligence (EI): self-awareness (SA), self-regulation (SR), motivation (MT), cmpathy (EM), social skills (SS).
4. Intelligence (IQ)

Hypothesis 5

Significant differences exist among the groups based on sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on the variables mental health, Type-A personality pattern, emotional intelligence and intelligence

Hypothesis 5 was tested in 6 steps considering one independent variable at a time.

5.3.1 Influence of levels of participation on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport person

In the one-way MANOVA performed, apart from the total scores of the variables subcomponents were also examined. F-value is found to be 1.702 which is significant at 0.05 level. It means that significant mean differences exist among sport persons of various levels of participation in one or more of the variables under study. The results of one-way MANOVA are presented in table 5.18.

Table 5.18

Results of MANOVA by levels of participation

Effect		Value	F
Intercept	Roy's Largest Root	115.336	2061.623
Levels of participation	Roy's Largest Root	0.095	1.702*

*Significant at 0.05 level

Table 5.19

Results of MANOVA: F-values of dependent variables by levels of participation

Dependent variables	Sum of squares	df	Mean square	F
Attitude towards self	30.564	2	15.282	0.524
Self-actualization	36.195	2	18.097	0.772
Integration	29.130	2	14.565	0.651
Autonomy	177.216	2	88.608	4.125*
Perception of reality	61.580	2	30.790	1.617
Environmental mastery	67.708	2	33.854	1.374
Mental health	849.581	2	424.790	1.232
Time urgency	1.922	2	0.961	0.586
Inappropriate aggression and hostility	2.348	2	1.174	1.333
Goal directed without proper planning	0.190	2	9.493.02	0.195
Polyphasic behavior	1.861	2	0.931	1.752
Type-A personality pattern	3.393	2	1.697	0.340
Self-awareness	19.265	2	9.633	0.985
Self-regulation	47.141	2	23.573	1.668
Motivation	219.506	2	109.753	4.186*
Empathy	53.017	2	26.536	2.573
Social skills	69.009	2	34.505	2.187
Emotional intelligence	1380.586	2	690.293	4.192*
Intelligence	408.544	2	204.272	1.922

*Significant at 0.05 level

Separate F- values for all the variables along with its significance based on different levels of participation are shown in the table 5.19 'Autonomy' (F, 4.125, $P < 0.05$) 'motivation' (F, 4.186, $P < 0.05$) and emotional intelligence (F, 4.192, $P < 0.05$), are the three variables which vary significantly in the mean according to the variation in levels of participation. Therefore separate post hoc analyses employing Scheffe's procedure were performed and the results are as follows.

Autonomy

It is found that one of the aspects of mental health i.e. autonomy significantly differs according to the variation in different levels of participation viz. international, national and state. The results of Scheffe's procedure are shown in table 5.20

Table 5.20

Results of Scheffe procedure for autonomy: comparison of groups based on levels of participation

Sl. No	Levels of participation	Mean	1	2	3
1	State	43.10			*
2	National	44.10			*
3	International	46.83			

*significant at 0.05 level

In the table it is clear that significant mean differences exist between state and international level participants; and national and international level participants. On the other hand, internationals are more autonomous than national and state level sport participants.

Motivation

Another variable which differs significantly according to the change of level of sport participation is one of the aspects of emotional intelligence, i.e. motivation.

Table 5.21

Results of Scheffe procedure for motivation: comparison of groups based on levels of participation

Sl. No	Levels of participation	Mean	1	2	3
1	State	20.30			*
2	National	20.30			*
3	International	22.05			

*significant at 0.05 level

Table 5.21 reveals that international sport participants have highest mean score (22.50) on motivation. And they are significantly higher ($P < 0.05$) than national (mean, 20.30) and state (mean, 20.30) participants.

Emotional intelligence

Emotional intelligence an emerging concept in the field of psychology is always compared with life success (Goleman, 1995). Taking level of participation as a criterion for success in sport, it can be concluded that the findings of the present study supports the notion that high achievers in sport enjoy higher emotional intelligence.

Table 5.22

Results of Scheffe procedure for emotional intelligence: comparison of groups
based on levels of participation

Sl.No	Levels of participation	Mean	1	2	3
1	State	103.53			*
2	National	107.94			*
3	International	109.00			

*significant at 0.05 level

Post hoc Scheffe procedure(table 5.22) reveals that internationals are significantly higher than that of their national level or state level counter parts. It is also noted that internationals have secured highest mean (109.00) followed by national participants (107.94) and state level participants (103.53). The progressive mean values from state level through national level to international level clearly depicts the importance of emotional intelligence in sport excellence. However, present investigation fails to find any significant mean difference between national level participants and state level participants.

5.3.2 Influence of levels of experience on mental health, Type-A personality pattern, emotional intelligence, and intelligence of sport persons

One-way MANOVA was employed on the dependent variables by levels of experience to test the hypothesis. The results of the analysis are shown in table 5.23.

Table 5.23

Results of MANOVA by levels of experience

Effect		Value	F
Intercept	Roy's Largest Root	310.513	5550.428
Level of experience	Roy's Largest Root	0.107	1.918*

*significant at 0.05 level

Table 5.24

Results of MANOVA: F-values of dependent variables by levels of experience

Dependent variable	Sum of squares	df	Mean square	F
Attitude towards self	21.603	2	10.802	0.370
Self-actualization	61.116	2	30.558	1.308
Integration	43.866	2	21.333	0.982
Autonomy	30.869	2	15.434	0.703
Perception of reality	25.740	2	12.870	0.672
Environmental mastery	82.716	2	41.358	1.682
Mental health	330.350	2	165.175	0.477
Time urgency	9.534	2	4.767	2.985
Inappropriate aggression and hostility	9.175	2	4.588	5.347**
Goal directed without proper planning	0.705	2	.352	0.725
Polyphasic behavior	1.380	2	.690	1.296
Type-A personality pattern	49.337	2	24.668	5.103**
Self-awareness	39.756	2	19.878	2.047
Self-regulation	99.976	2	49.988	3.581*
Motivation	72.551	2	36.276	1.358
Empathy	8.013	2	4.007	.383
Social skills	132.060	2	66.030	4.242*
Emotional intelligence	1163.943	2	581.972	3.519*
Intelligence	317.223	2	158.611	1.488

*Significant at 0.05 level **Significant at 0.01 level

The F-value is found to be 1.918 which is significant at 0.05 level, is a clear indication of significant mean difference on some of the dependent variables viz. mental health, emotional intelligence, Type-A personality pattern and the components of these variables along with IQ. Among the 19 variables entered for the analysis, 5 of them are found to be significant which is reflected by the high F- ratios. Inappropriate aggression and hostility ,Type-A personality pattern, self-regulation, social skills and emotional intelligence are the variables obtained significant mean difference for three levels of experience: novice, moderately experienced, and highly experienced. The F- ratios for the same are 5.347 and 5.103 ($P < 0.01$ level); 3.581, 4.242, 3.519 ($P < 0.05$ level) respectively. Neither the variable mental health nor its components differ significantly along with the variation in sport experience. Nevertheless, there are studies that give evidence for the positive relation between mental health and duration of physical activity(Weinberg & Gould,1999). A different result of the present study may be attributed to the intention of the participants, and the different nature of physical activity the sport persons are engaged in.

The variables with statistically significant F-values were subjected to separate post hoc analyses as follow. The whole sample was classified as novice, moderately experienced and highly experienced based on mean and standard deviation of years of experience of the sample. Thus four years of experience in sport considered to be as moderate and above five years of experience and below three years of experience as highly experienced and novice respectively.

Inappropriate aggression and hostility

Table 5.25 depicts that the mean of the three groups on inappropriate aggression and hostility is reduced as the years of experience increased. Thus the highest mean (1.94) on the variable was obtained by the novices followed by moderately experienced (1.91); and highly experienced (1.58) groups of sport

persons. Significant mean difference exists between the novices and moderately experienced; and moderately experienced and highly experienced groups of sport persons.

Table 5.25

Results of Scheffe procedure for inappropriate aggression and hostility:
comparison of groups based on levels of experience

Sl.No.	Levels of experience.	Mean	1	2	3
1	Novice	1.94		*	
2	Moderately experienced	1.91			*
3	Highly experienced	1.58			

*Significant at 0.05 level

Type-A personality pattern

The mean of the three groups on Type-A personality pattern showed in table 5.26. The result of post hoc analysis by Scheffe procedure gives the idea that significant mean difference is evident between the novices and moderately experienced; and moderately experienced and highly experienced groups of sport persons.

Table 5.26

Results of Scheffe procedure for Type-A personality pattern: Comparison of
groups based on levels of experience

Sl.No	Levels of experience.	Mean	1	2	3
1	Novice	6.63		*	
2	Moderately experienced	6.28			*
3	Highly experienced	5.70			

*Significant at 0.05 level

Self-regulation

The mean of the variable self-regulation for different groups of sport persons based on their professional experience and the significant mean differences are given in table 5.27

Table 5.27

Results of Scheffe procedure for self-regulation: comparison of groups based on levels of experience

Sl.No	Levels of experience.	Mean	1	2	3
1	Novice	18.90		*	*
2	Moderately experienced	17.86			
3	Highly experienced	19.38			

*significant at 0.05 level

As the results indicate highly experienced sport persons (mean,19.38) are able to manage their negative emotions better than the novice(18.90) while moderately experienced individuals (mean,17.86) are significantly lower in self-regulation compared to moderately experienced sport persons.

Social skills

Novices (mean, 19.22) differ significantly from moderately experienced (mean, 19.67) sport persons as they have secured the lowest mean. And the latter differs significantly from highly experienced group (mean, 20.70), as they have obtained the highest mean (table 5.28).

Table 5.28

Results of Scheffe procedure for Social skills: comparison of groups based on levels of experience

Sl.No	Levels of experience.	Mean	1	2	3
1	Novice	19.22		*	
2	Moderately experienced	19.67			*
3	Highly experienced	20.70			

*Significant at 0.05 level

Emotional intelligence

Though the components of emotional intelligence, self-regulation and social skills show statistically significant mean differences among the groups of novices, moderately experienced and highly experienced sport persons (table 5.27 and table 5.28). The total score on emotional intelligence does not show any statistically significant mean difference as revealed by post hoc analysis (table 5.29). The MANOVA table (table 5.24) shows significant mean difference on the variable emotional intelligence, however.

Table 5.29

Results of Scheffe procedure for emotional intelligence: comparison of groups based on levels of experience

Sl.No	Levels of experience.	Mean	1	2	3
1	Novice	105.19			
2	Moderately experienced	103.34			
3	Highly experienced	108.14			

5.3.3 Influence of family sport status on mental health, Type-A personality pattern, emotional intelligence, and intelligence of sport persons

Family Sports status is a next important factor that is assumed to have impact on the psychological domain of sport persons. One-way MANOVA was employed to check the tenability of hypothesis 5.

Table 5.30
Results of MANOVA by family sport status

Effect		Value	F
Intercept	Roy's Largest Root	125.758	2240.066
Family sport status	Roy's Largest Root	0.118	2.111**

**significant at 0.01 level

Table 5.31
Results of MANOVA: F-values of dependent variables by levels of family sport status

Dependent variable	Sum of squares	df	Mean square	F
Attitude towards self	117.652	2	58.826	2.034
Self-actualization	94.179	2	47.090	2.021
Integration	3.052	2	1.526	0.068
Autonomy	220.833	2	110.417	5.167**
Perception of reality	110.646	2	55.323	2.933
Environmental mastery	50.723	2	25.361	1.024
Mental health	2825.309	2	1412.655	4.164*
Time urgency	0.487	2	0.244	0.148
Inappropriate aggression	0.210	2	0.105	0.119
Goal directed without proper planning	0.928	2	0.464	0.957
Polyphasic behavior	0.912	2	0.456	0.855
Type-A personality pattern	5.091	2	2.546	0.515
Self-awareness	26.497	2	13.249	1.354
Self-regulation	9.248	2	4.624	0.325
Motivation	91.957	2	45.978	1.720
Empathy	69.510	2	34.755	3.377
Social skills	9.261	2	4.630	0.289
Emotional intelligence	402.453	2	201.227	1.196
Intelligence	29.597	2	14.798	0.138

*Significant at 0.05 level **Significant at 0.01 level

The whole sample was categorized into three, based on the family sport status. Those sport persons having close relatives (father, mother, brother and, sister) were grouped as sound FSS; those having distant relatives (uncle, aunt, grand-father etc-all relatives other than close relatives) as moderate FSS; and the persons having neither close relatives nor distant relatives as poor FSS. The F-value for the variable family sports status on the variables mental health, Type-A personality pattern emotional intelligence, and intelligence is found to be 2.111 which is significant at 0.01 level (table 5.30). As the significance of the F-value suggests significant mean differences among the variables concerned, based on three groups of family sport status. Table 5.31 is provided with all the F-values. Only two of the dependent variables are identified as having mean difference among the three groups of family sport status. 'Autonomy' (F-value 5.167, $P < 0.01$ level) and overall mental health (F-value 4.164, $P < 0.05$ level) are the variables identified. Post hoc analyses were employed for these variables to identify the specific groups which differ significantly.

Autonomy

The results of post hoc analysis on the variable autonomy by Scheffe procedure shown in table 5.32

Table 5.32

Results of Scheffe procedure for autonomy: comparison of groups based on levels of experience

Sl.No	Family sport status	Mean	1	2	3
1	Poor family sport status	44.55		*	
2	Moderate family sport status	44.15			*
3	Sound family sport status	42.66			

*significant at 0.05 level

Being one aspect of positive mental health, autonomy, is found to have significant mean difference ($P < 0.05$) between the groups of poor family sport status and moderate; and moderate family sport status and sound family sport status.

Mental health

The mean of overall mental health scores obtained by the different groups based on family sport status are shown in table 5.33. As the Scheffe procedure points out, sport person without any sport family back ground (poor FSS, mean, 267.77) significantly differs on mental health from sport persons having uncle, aunt, grand-father etc as sport persons (moderate FSS, mean, 261.89). However, the latter obtained significantly lower mean when compared to sport persons having father, mother, brother and sister (high FSS, mean, 262.85).

Table 5.33

Results of Scheffe procedure for mental health: comparison of groups based on levels of experience

Sl.No	Family sport status	Mean	1	2	3
1	Poor Family sport status	267.77		*	
2	Moderate Family sport status	261.89			*
3	Sound Family sport status	262.85			

*significant at 0.05 level

5.3.4 Influence of Punctuality on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons

Table 5.34

Results of MANOVA by punctuality

	Effect	Value	F
Intercept	Roy's Largest Root	22.553	403.135
Punctuality	Roy's Largest Root	0.131	2.358**

**Significant at 0.01 level

Table 5.35

Results of MANOVA : F-values of dependent variables by levels of punctuality .

Dependent variable	Sum of squares	df	Mean square	F
Attitude towards self	87.552	2	43.776	1.511
Self-actualization	305.311	2	152.655	6.769**
Integration	82.254	2	41.127	1.853
Autonomy	139.325	2	69.662	3.224*
Perception of reality	61.605	2	30.802	1.618
Environmental mastery	170.906	2	85.453	3.517*
Mental health	4321.294	2	2160.647	6.482**
Time urgency	0.907	2	0.453	0.276
Inappropriate aggression	0.245	2	0.122	0.138
Goal directed without proper planning	0.197	2	9.873	0.203
Polyphasic behavior	0.303	2	0.152	0.283
Type-A personality pattern	5.352	2	2.676	0.537
Self-awareness	154.343	2	77.171	8.272**
Self-regulation	65.004	2	32.502	2.309
Motivation	150.898	2	75.449	2.853
Empathy	57.480	2	28.740	2.791
Social skills	271.764	2	135.882	8.998**
Emotional intelligence	3000.979	2	1500.489	9.421**
Intelligence	501.137	2	250.568	2.365

*Significant at 0.05 level**Significant at 0.01 level

Punctuality was measured by a 3-point self-rating scale. Based on the response to the scale, whole sample was grouped into three such as low punctual, moderate punctual and high punctual group (table 5.34).

A high value of F-value 2.358 that is significant at 0.01 level is the statistical evidence of the mean difference among three groups of sport persons – Low punctual, Moderate punctual, and High punctual – on some of the variables concerned.

Separate F-values for the dependent variables are showed in table 5.35. Seven out of 19 variables are found to have significant F-values. Self-actualization, mental health self-awareness, social skills and emotional intelligence are significantly differed at 0.01 level on its means as indicated by the F-values, 6.769, 6.482, 8.272, 8.998 and 9.421 respectively. Two variables ‘autonomy’ and ‘environmental mastery’ have obtained F-values 3.224 and 3.517 respectively that are significant at 0.05 levels. Post hoc analyses by Scheffe procedure for each significant variable are as follow.

Self-actualization

Self-actualization is one aspect of positive mental health, which differs significantly among groups based on different levels of punctuality. The highest mean(46.63) was obtained by high punctual group, followed by low punctual(45.00) and moderate punctual group(43.51). Significant mean differences has obtained between low punctual and moderate punctual group as well as high punctual and moderate punctual groups. It may be noted that high punctual group has scored higher than the low punctual group whereas the latter scored significantly higher when it is compared with moderate punctual group(table 5.36).

Table 5.36

Results of Scheffe procedure for self-actualization: comparison of groups based on levels of punctuality

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	45.00		*	
2	Moderate punctual	44.51			*
3	High punctual	46.63			

*significant at 0.05 level

Autonomy

The results of post hoc analysis on the variable autonomy are shown in table 5.37 autonomy as a desirable aspect of sport persons' mental health is identified as significantly high (mean,44.38) on high punctual group compared to low punctual group(mean,43.00). However, low punctual group is found to be more autonomous than the moderate punctual group (mean,41.91).

Table 5.37

Results of Scheffe procedure for autonomy: comparison of groups based on levels of punctuality.

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	43.00		*	*
2	Moderate punctual	41.91			
3	High punctual	44.38			

*significant at 0.05 level

Environmental mastery

The mean of the groups, low punctual, moderate punctual and high punctual on environmental mastery are estimated as 46.50, 43.54 and 45.10 respectively. Significant mean differences are found between the groups, low punctual and high punctual group and low punctual and moderate punctual group. The results are presented in table 5.38.

Table 5.38

Results of Scheffe procedure for environmental mastery: comparison of groups based on levels of punctuality

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	46.50		*	*
2	Moderate punctual	43.54			
3	High punctual	45.10			

*significant at 0.05 level

Mental health

Overall mental health of highly punctual sport persons is found to be comparatively high (mean, 268.70). The mean is significantly higher than the low punctual group (mean, 260.71). When compared with moderate punctual group(mean, 267.50), low punctual group(mean, 260.71) significantly differs(table 5.39).

Table 5.39

Results of Scheffe procedure for mental health: comparison of groups based on levels of punctuality

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	260.71		*	*
2	Moderate punctual	267.50			
3	High punctual	268.70			

*Significant at 0.05 level

In brief, sport persons who are highly punctual are likely to be mental healthy than the low punctual counter parts. However, a low punctual sport person tends to be mentally healthy than a moderate punctual sport person.

Self-awareness

As the F- value (8.272) suggests significant mean difference among the different punctuality groups on self-awareness, separate post hoc analysis was performed on the variable. The results are given in table 5.40.

Table 5.40

Results of Scheffe procedure for self-awareness: comparison of groups based on levels of punctuality

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	21.50		*	*
2	Moderate punctual	22.78			
3	High punctual	23.28			

*Significant at 0.05 level

Self-awareness tends to be increased as the degree of punctuality of the group is increased. And it is noted that high punctual group has yielded highest mean (23.28), followed by moderate punctual (22.78) and low punctual group (21.50). The high punctual group is significantly higher than low punctual group on self-awareness. And the moderate punctual group is significantly higher than the low punctual group.

Social skills

Table 5.41 shows that low punctual group has secured highest mean (mean, 25.50) on social skills and it is significantly higher than that of the high punctual group (mean, 20.69) as well as moderate punctual group (mean, 18.61).

Table 5.41

Results of Scheffe procedure for social skills: comparison of groups based on levels of punctuality

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	25.50		*	*
2	Moderate punctual	18.61			
3	High punctual	20.69			

*significant at 0.05 level

Emotional intelligence

Post hoc test (table 5.42) suggests that high punctual group's mean (109.00) is significantly higher than that of the moderate punctual group (mean, 106.7) and the low punctual group (102.05).

Table 5.42

Results of Scheffe procedure for emotional intelligence: comparison of groups
based on levels of punctuality

Sl.No	Punctuality	Mean	1	2	3
1	Low punctual	102.05		*	*
2	Moderate punctual	106.70			
3	High punctual	109.00			

5.3.5 Influence of self-practice on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons

MANOVA was employed to find out influence of self practice on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.

Table 5.43

Results of MANOVA by self- practice

Effect		Value	F
Intercept	Roy's Largest Root	11.032	197.194
Self-practice	Roy's Largest Root	0.071	1.279

Not Significant

Table 5.44

Results of MANOVA : F-values of dependent variables by levels self-practice

Dependent variable	Sum of squares	df	Mean square	F
Attitude towards self	53.456	2	26.728	0.919
Self-actualization	3.695	2	1.847	0.078
Integration	22.785	2	11.392	0.509
Autonomy	9.065	2	4.531	0.206
Perception of reality	57.593	2	28.797	1.511
Environmental mastery	3.809	2	1.905	0.077
Mental health	160.950	2	80.475	0.232
Time urgency	0.110	2	5.497	0.033
Inappropriate aggression	1.889	2	0.944	1.071
Goal directed without proper planning	1.828	2	0.914	1.896
Polyphasic behavior	0.981	2	0.490	0.918
Type-A personality pattern	9.655	2	4.827	0.972
Self-awareness	58.717	2	29.358	3.043
Self-regulation	2.010	2	1.005	0.070
Motivation	65.765	2	32.883	1.230
Empathy	27.073	2	13.537	1.302
Social skills	22.378	2	11.189	0.702
Emotional intelligence	654.677	2	327.338	1.959
Intelligence	167.935	2	83.967	0.784

Not Significant

The variable self-practice refers to the sport practice initiated by the sport person himself or herself other than the initiation of any other significant persons like coaches, parents, friends etc. And it was measured by a 3- point self-rating scale. Based on the responses the sample was divided into three such as low, moderate and high self-practice group. The estimated F-value (1.279) failed to meet the criteria to be statistically significant (table 5.43). And hence it can be asserted that there exist no significant differences among sport persons having various self practice levels on mental health, emotional intelligence, Type-A personality pattern and intelligence, which means that the variation in self-practice could not be considered as an indicator of differences in sport persons' mental health, emotional intelligence, intelligence and Type-A personality pattern. So that further post hoc statistical procedures were excluded.

5.3.6 Influence of perceived self-competence on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.

F-value was estimated by making use of MANOVA. Sport persons were grouped into three: low perceived-self competence, moderate perceived-self competence and high perceived-self competence based on their own evaluation. All these groups were compared for significant mean difference on mental health, emotional intelligence, Type-A personality pattern and intelligence.

Table 5.45
Results of MANOVA by perceived-self competence

Effect		Value	F
Intercept	Roy's Largest Root	80.532	1439.503
Perceived-self competence	Roy's Largest Root	0.122	2.184*

*Significant at 0.05 level

Table 5.46

Results of MANOVA: F-values of dependent variables by levels of perceived-self competence

Dependent variable	Sum of squares	df	Mean square	F
Attitude towards self	163.929	2	81.964	2.854
Self-actualization	58.811	2	29.406	1.258
Integration	72.633	2	36.317	1.634
Autonomy	42.760	2	21.380	0.975
Perception of reality	38.216	2	19.108	0.999
Environmental mastery	169.959	2	84.979	3.497*
Mental health	2501.819	2	1250.909	3.686*
Time urgency	2.546	2	1.273	0.778
Inappropriate aggression	2.432	2	1.216	1.382
Goal directed without proper planning	2.855	2	1.427	2.982
Polyphasic behavior	3.695	2	1.848	3.519*
Type-A personality pattern	41.292	2	20.646	4.248*
Self-awareness	56.709	2	28.355	2.937
Self-regulation	206.906	2	103.453	7.605**
Motivation	185.429	2	92.714	3.521*
Empathy	59.657	2	29.829	2.899
Social skills	126.201	2	63.100	4.049*
Emotional intelligence	2890.921	2	1445.461	9.055**
Intelligence	158.607	2	79.303	0.740

*Significant at 0.05 level **Significant at 0.01 level

The F-value computed is 2.184, which is significant at 0.01 level. This is a clear indication that there are certain dependent variables differ significantly on its means among the three groups of sport persons under study. The particular variables were identified as shown in table 5.46. The F- values for, environmental mastery, mental health, polyphasic behaviour, Type-A personality pattern, self-regulation, motivation, social skills and emotional intelligence are 3.497, 3.686, 3.519, 4.248, 7.605, 3.521, 4.049 and 9.055 respectively. The post hoc analyses for these variables are as follow.

Environmental mastery

The ability to control and influence one's own environment is found to have gradations according to the changes in perceived self-competence. Competent group has secured the highest mean (45.38) followed by moderate competent (mean, 44.20) and low competent (mean, 41.63) but all these groups failed to establish any significant mean difference (table 5.47).

Table 5.47

Results of Scheffe procedure for environmental mastery: comparison of groups based on levels of perceived self-competence

Sl.No	Perceived self-competence	Mean	1	2	3
1	Low competent	41.63			
2	Moderate competent	44.20			
3	High competent	45.38			

Not significant

Mental health

Table 5.48 shows that highest mean secured by high competent groups (268.98) followed by competent (mean, 264.62) and low competent groups

(mean, 254.13). However, no group is significantly higher or lower in mental health as revealed by the post hoc analysis.

Table 5.48

Results of Scheffe procedure for mental health: comparison of groups based on levels of perceived self-competence

Sl.No	Competent	Mean	1	2	3
1	Low competent	254.13			
2	Moderate competent	264.62			
3	High competent	268.98			

Not significant

Polyphasic behaviour

One aspect of Type-A personality pattern, polyphasic behaviour as an undesirable personality pattern is significantly high in low competent group (mean,1.00) than moderate perceived self-competent group (mean,0.87) and low perceived self-competent group (mean,0.74). It means that sport persons who are impulsive in action and engage in more than one assignments at a time without considering its consequences, are likely to feel less competent. Most of their endeavor might not have fetched positive results, this might be the reason for the feeling of low competency(table 5.49).

Table 5.49

Results of Scheffe procedure for polyphasic behaviour: comparison of groups based on levels of perceived self-competence

Sl.No	Competent	Mean	1	2	3
1	Low competent	1.00		*	*
2	Moderate competent	0.87			
3	High competent	0.74			

*significant at 0.05 level

Type-A personality pattern

The total score on Type-A personality pattern is represented by mean scores of three groups shown in table 5.50. The total score includes four components of Type-A personality pattern. As it is evident in the table, the highest mean (7.13) is obtained by low competent group followed by moderate (6.28) and high(5.61) perceived self-competent group. And the low competent group is significantly different in its mean compared to moderate and high perceived self-competent group.

Table 5.50

Results of Scheffe procedure for Type-A personality pattern: comparison of groups based on levels of perceived self-competence

Sl.No	Perceived self competence	Mean	1	2	3
1	Low competent	7.13		*	*
2	Moderate competent	6.28			
3	High competent	5.61			

*significant at 0.05 level

Self- regulation

In post-hoc analysis (table 5.51), it is clear that all the three groups, low, moderate, and perceived self-competent groups differ significantly from one another ($P < 0.05$) on self-regulation. The highest mean was yielded by high competent group (mean, 19.77) followed by moderate (mean, 18.62) and low (mean, 15.25) perceived self-competent group.

Table 5.51

Results of Scheffe procedure for self-regulation: comparison of groups based on levels of perceived self-competence

Sl.No	Competent	Mean	1	2	3
1	Low competent	15.25		*	*
2	Moderate competent	18.62			*
3	High competent	19.77			

*significant at 0.05 level

Motivation

Though the one-way MANOVA table (5.46) shows significant mean difference, in post-hoc analysis (table 5.52) significant mean difference is established by none of the groups based on perceived self-competence on the variable motivation, one aspect of emotional intelligence. The variable is found to be high (mean, 22.38) in high competent group compared to other groups such as moderate competent group (mean, 20.99) and low competent group(mean,19.00).

Table 5.52

Results of Scheffe procedure for motivation: comparison of groups based on levels of perceived self-competence

Sl.No	Perceived self competence	Mean	1	2	3
1	Low competent	19.00			
2	Moderate competent	20.99			
3	High competent	22.38			

Not Significant

Social skills

Another component of emotional intelligence, social skills, is also failed to establish any significant mean difference in post-hoc analysis. However in MANOVA(table 5.46) the result is positive. Still, it may be noted that high perceived self-competent group is higher(mean, 20.84) on social skills compared to moderate perceived self-competent group(mean,19.77) and low perceived self-competent group(mean, 17.75).

Table 5.53

Results of Scheffe procedure for social skills: comparison of groups based on levels of perceived self-competence

Sl.No	Perceived self competence	Mean	1	2	3
1	Low competent	17.75			
2	Moderate competent	19.77			
3	High competent	20.84			

Not Significant

Emotional intelligence

Post- hoc analysis by Scheffe procedure (table 5.54) reveals that all the three groups-low, moderate, and high perceived self-competent groups differ one another on the variable emotional intelligence. The highest mean (109.72) was obtained by high competent group followed by moderate competent (mean, 104.93) and low competent group (94.00). It may be noted that high competent group differs significantly from moderate and low competent groups. And moderate perceived self-competent group differs significantly from low perceived self-competent group. These results mean that the sport person who perceive himself or herself as highly competent is likely to be highly emotionally

intelligent compared to those persons who perceive them selves as comparatively less competent.

Table 5.54

Results of Scheffe procedure for emotional intelligence: comparison of groups based on levels of perceived self-competence

Sl.No	Perceived self competence	Mean	1	2	3
1	Low competent	94.00		*	*
2	Moderate competent	104.93			*
3	High competent	109.72			

*Significant at 0.05 level

Based on the above findings hypothesis 5 is partially accepted.

5.3.7 Results of MANOVA: An overview

Dependent variables considered for MANOVA were mental health, type-A personality pattern, emotional intelligence and intelligence. Separate MANOVAs performed for the independent variables viz., 1. Levels of participation 2. Levels of experience 3. Family sport states 4. Levels of Punctuality 5. Levels of Self-Practice 6. Levels of Perceived self-competence. In an overview it is observed that:

1. Levels of participation has significant influence on autonomy, motivation, and overall emotional intelligence.
2. Levels of experience has significant influence on inappropriate aggression and hostility, type-A personality pattern, self-regulation, and social skills.
3. Family sport status has significant influence on autonomy and overall mental health.

Comparison of groups based on
sex, nature of sport and Type-A
personality pattern

5.4 t-test analysis and discussion

Separate t-tests were performed for three major categories. Sex (male and female) and skill categories (open and closed skill), on the variables mental health, Type-A personality pattern, emotional intelligence and intelligence. The third category, personality pattern(type-A and type-B) on the variables mental health, emotional intelligence and intelligence.

5.4.1 Sex wise analysis

Hypothesis 6

Significant differences exist between male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.

The results of the t-test analyses for the variable sex are discussed under four heads such as: mental health, Type-A personality pattern, emotional intelligence and intelligence.

Mental health

Regarding the mental health of sport persons it can be stressed that male sport persons are mentally healthy than their female counter parts. The critical ratio obtained for the mean difference of the two groups is 3.65 which is significant 0.01 level (table 5.55).

Table 5.55

Mean, standard deviation and t- value of mental health based on sex

Variable	Sex				t- value
	Male sport persons (N=161)		Female sport persons (N=143)		
	Mean	SD	Mean	SD	
Attitude towards self	41.63	4.57	40.67	6.17	1.52
Self-actualization	46.58	4.55	45.15	5.06	2.57*
Integration	46.22	4.91	44.73	4.39	2.78**
Autonomy	43.71	4.78	44.04	4.58	0.61
Perception of reality	45.66	4.31	44.17	4.32	3.02**
Environmental mastery	45.80	4.69	43.21	4.94	4.68**
Mental health	269.60	18.67	261.97	17.70	3.65**

*Significant at 0.05 level ** Significant at 0.01 level

Apart from the overall mental health males scored significantly high on 'self actualization' (mean, 46.58), 'integration' (mean, 46.22), 'perception of reality' (3.02) and 'environmental mastery.' Female scored high (mean, 44.04) on 'autonomy' compared to males (mean, 43.71). But the mean difference is not statistically significant as show by the critical ratio 0.61. Though the mean score (41.63) of males' attitude toward self is higher than that of females' mean (40.67), the t-value shows that the mean difference is not statistically significant.

Greenglass (1998) in a discussion on gender and mental health concludes that women are biologically more vulnerable to certain psychological disorders. Sport, as a field of failure, upsets, setbacks, demands, effective coping strategies were women have to struggle more to maintain mental-equilibrium than male counterparts due to their inherent peculiarities. One of the vehement criticisms

for such findings which depict women's mental health score as low is echoed is green glass's words "women are considered less psychologically healthy than men because men constitute the standard for what is mentally healthy".

Gender as another major source for individual difference has been examined in relation with mental health. Research indicates that women not only experience stress more than men, they also have more symptomatology than men. Women are exposed to more stressful life events than are men and, as a result they have higher rates of psychological distress. Women experience anxiety and mood disorders at a greater rate than men as a result of the kind of outcome measures that are typically used in research in this area. These studies tend to employ self-report measures of symptomatology. It is generally assumed that if an individual is coping reasonably, well, she/he is free from anxiety and depression. This conceptualization of effective coping leads to a bias in research findings given that women, more than men, often express distress. Some argue that women appear more distressed because they are more likely than men to report symptoms of all kinds. Gender-role factors contribute to the degree to which individual report symptoms and seek help. Traditional masculine and feminine gender roles differ in the amount of vulnerability and permissibility in seeking help from others. Traditionally, men are seen as strong and invulnerable, thus restraining men from showing symptoms of mental illness or seeking help. The traditional feminine gender role allows and even encourages vulnerability to problems, thus resulting in the greater reporting of illness symptomatology

Notwithstanding women's greater "openness" regarding their psychological symptomatology, research indicates many reasons for women's greater distress. Despite their greater employment, women still tend to be concentrated in "female" occupational spheres including education, health care, clerical domestic, and service industries. Women have less promotional

opportunities, make less money, and often do not have access to membership in the "old boys" network," all of which restricts their advancement on the job. Women professionals and managers are subject to negative stereotyped attitudes that portray women as doing a poor job fitting into the male work world. Sex discrimination and harassment remain endemic in the workplace. Such attitudes not only harm salary and promotion prospects for women, they are also detrimental to their mental health.

Reproductive life events including menstruation, pregnancy, childbirth, and menopause are stressful for women, and fluctuations in women, hormones do not explain responses to them. Research shows that neuro-endocrine responses are altered by social roles and other socio-cultural variables. Personal and social coping resources affect how women respond to these changes, which necessitates placing reproductive life events within a broader psychosocial framework in order to understand their effects on women (Koslowsky, 1998).

Type-A personality pattern

Arithmetic mean of the scores on time urgency (2.70), inappropriate aggression (1.85), 'goal directedness without proper planning' (.81), polyphasic behavior (0.96) of female sport persons are high compared to male sport persons. The scores are 2.65, 1.63, 0.72, and 0.81 respectively (table 5.56).

Table 5.56

Mean, standard deviation, and t- value of Type-A personality pattern based on sex

Variable	Sex				t- value
	MaleSport persons (N=161)		FemaleSport persons (N=143)		
	Mean	SD	Mean	SD	
Time urgency	2.65	1.33	2.70	1.22	0.36
Inappropriate aggression and hostility	1.63	0.91	1.85	0.96	1.97*
Poliphasic behaviour	0.72	0.68	0.81	0.71	1.13
Goaldirectedness without proper planning	0.81	0.71	0.96	0.74	1.72
Personality	5.81	2.22	6.31	2.21	1.97*

*Significant at 0.05 level

Even though only inappropriate aggression is significantly higher for female sport persons. Total personality scores is also high, t-value is 1.97($P < 0.05$).

Le Unes and Nation (2002) examined a wide body of research on the sex role orientation of athletes and came to several conclusions.

- 1) It is apparent that female athletes tend not to express a familiar sex role orientation.
- 2) Masculine sex role orientations are quite common among female athletes, and
- 3) The sex role orientation of female athletes was more often masculine than it was feminine.

Since the Type-A personality pattern is more congruent with male sex role orientations. Female sport persons with male sex role orientation likely to have higher scores on Type-A personality pattern scale, compared to female non-athletes; such a comparison is out of the scope of the present study. It is worthwhile to note that female sport persons scored higher than the male counterparts and the mean difference (1.97) is statically significant at 0.05 level. The extra momentum the female sport persons have to achieve to break their natural sex role orientations might have been resulted in inappropriate aggression, excess of time urgency etc to score high on Type-A personality pattern. Such a paradigm shift of sex role orientation of female sport participant has been reported by Gill (1992) and Marten and Marten(1995).

In 1980, Williams found that successful female athletes differed markedly from the 'normative' female in terms of personality profile. Compared with female non-athlete, women athletes were found to be more achievement oriented, independent, aggressive, emotionally stable, and assertive. Apparently, outstanding athletes have similar personality characteristics, regardless of being male or female (Weinberg and Gould,1999)

Lipowski and Liposka (2001) conclude their study asserting that neuroticism is the personality feature most strongly connected with women's participation in physical recreation. The higher level of this factor, the smaller amount of recreation forms, shorter period of recreation practice. This enables arguing that neuroticism is not favourable for health-promoting behaviours. Neuroticism correlates negatively with general life satisfaction and own health esteem which should be a factor motivating to undertaking physical activity in order to improve one's health.

Manoj and Subramanyam (2000) carried out one investigation to find out the gender dominance on inertia, Activation, and stability, which were the

components of personality. Investigation was done on dominance level of Inertia, Activation. Stability (IAS), Inertia + Activation, Inertia + Stability, and Activation + Stability. The data on stability dominance group was found that female sports person showed a higher degree of stability dominance. The data on Inertia +Activations dominance characters, no such significant difference was found between Sex and I.A.S, On Inertia +Stability dominant character a high significant difference was found between sex and between the variables I.A.S. On Activation + Stability female sports person showed higher degree in this linked dominance. Except the linked character of Inertia + Activation all the result showed the female sports persons were dominating higher than the male sports persons

Emotional intelligence

Table 5.57

Mean, standard deviation and t- value of emotional intelligence based on sex

Variable:	Sex				t- value
	Male Sport persons (N=161)		Female Sport persons (N=143)		
	Mean	SD	Mean	SD	
Self-awareness	22.58	3.21	22.98	3.03	1.12
Self-regulation	19.24	4.05	18.66	3.41	1.37
Motivation	22.32	5.82	20.52	4.15	3.13**
Empathy	23.87	3.32	22.32	2.92	4.32**
Social skills	20.53	4.13	19.66	3.79	1.92
Emotional intelligence	108.54	14.28	104.14	10.90	3.04**

*Significant at 0.05 level ** Significant at 0.01 level

Table 5.57 shows that male sport persons score high on 'self-regulation' (mean,19.24), 'motivation' (mean,22.32), 'empathy'(mean,23.87) and social skills(mean,20.53), and total emotional intelligence(mean,108.54) than female sport persons. Mean values are 18.66, 20.52, 22.32 and 19.66 respectively. In the domain of self-awareness females scored lightly (mean=29.98) males (mean=22.58). But only two values are statistically significant u, 'motivation' (3.13) and 'empathy' (4.32). Both values are significant at 0.01 level. Altogether male sport persons are more emotionally intelligent than female sport persons. The t-value for the total scores of emotional intelligence of male and female is 3.04, which is significant at 0.01 level of confidence.

Barrett et al. (2002), has examined sex differences in emotional awareness. Women scored higher on a performance test of emotional awareness than did male participants. Women consistently displayed more complexity and differentiation in their articulations of emotional experiences than did men, even when the effect of verbal intelligence was controlled. Together the findings suggest that sex difference in display of emotional awareness is a stable, highly generalisable effect.

Sex difference also has been established on 'social skills(Petrides and Adrian, 2000, Henry et al., 2001). Emotional expression (Agneta, et.al, 2004) contrary to the results of present investigation, Pudjicts has found that females are emotionally intelligent than the males. Goleman (1995) proposes certain reasons for the difference between the emotional world of males and females. One such reason is his own words is "boys and girls are taught very different lessons about handling emotions". The acts of these emotional difference would they may be partly biological, also can be traced back to childhood.

Intelligence

There are little empirical studies dealing with the intelligence of sport persons. This is not to say that the cognitive domain of the sport person is not explored, literature on ‘intelligence’ as such is comparatively less in number compared to any other applied branch of psychology.

Table 5.58

Mean, Standard deviation, t-value of intelligence of sport person based on sex

Variable	Sex				t- value
	Male Sport persons (N=161)		Female Sport persons (N=143)		
	Mean	SD	Mean	SD	
Intelligence	112.27	9.92	109.46	10.63	2.37*

*Significant at 0.05 level

The mean IQ of male sport person is 112.27 whereas that of the female sport person is 109.46. The difference between the mean scores is statistically significant at 0.05 level (t-value, 2.37) (table 5.58). Further investigation is required to confirm the results and to find out the reason for the same. Genetic factors and environmental factors may play to make gender difference of sport person’s intelligence.

According to Smaulski et al. (2001) the concept of intelligence of game is generally related to the terms: “problem solving”, “thinking”, “rationality” and “perception”. In the association test, significant differences were found between male and female athletes regarded to the terms “illumination”, “concentration” and “magical thoughts.” These terms were significantly more associated with intelligence of game by male athletes. The conclusion of this study is that the concept of creativity and intelligence of male and female athletes are significantly different in terms of “magical thoughts”, “irrationality”, “presentiment”, “illumination” and “concentration”, considering higher scores for the male athletes.

5.4.2 Skill category wise analysis

Hypothesis 7

Significant differences exist between open and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.

The results of the t-test analyses for the variable skill category are discussed under four heads such as: mental health, Type-A personality pattern, emotional intelligence and intelligence

The difference in capabilities, temperament, confrontation, techniques and tactics needed for excellence in open skill category and closed skill category sporting events are predominant. It is worthwhile to note how these differences influence their mental health.

Mental health

Table 5.59

Mean, standard deviation and t-value of mental health based on skill category

Variable	Skill category				t- value
	Open skill(N=165)		Closed skill (N=139)		
	Mean	SD	Mean	SD	
Attitude towards self	41.14	4.21	41.22	6.54	0.13
Self-actualization	45.96	4.93	45.85	4.74	.20
Integration	45.96	4.63	44.99	4.80	1.79
Autonomy	44.14	4.69	43.53	4.67	1.13
Perception of reality	45.38	3.98	44.46	4.77	1.81
Environmental mastery	45.08	5.14	44.99	4.71	1.94
Mental health	267.67	17.89	264.04	19.26	1.69

Table 5.59 shows the mean, standard deviation and t-value of the two categories on all the subcategories and the total score of mental health. It is clear

from the results that neither the components nor the total score differ statistically for the two groups concerned. It can be said that change in the nature of sporting events does not make any difference in the mental health of sport persons performing different events.

Type-A personality pattern

After reviewing the literature on personality sport type Cox (1998) concludes that differences exist on the personalities of athletes who engage in different types of sport perhaps the clearest distinction occurs between athletes involved in team sports and individual sports. In the present investigation various sport disciplines were classified on different criteria to form two categories – closed skill category and open skill category. Closed skill sport persons scored significantly high (mean,6.53) than their open skill counterparts(mean,5.64), t-value is 3.51 which is significant at 0.01 level. Other two aspects of Type-A personality pattern-time urgency and inappropriate aggression- are also significant at 0.05 level (table 5.60).

Table 5.60

Mean, Standard deviation, and t-value of Type-A personality pattern based on skill category

Variable	Skill category				t-value
	Open skill (N=165)		Closed skill (N=139)		
	Mean	SD	Mean	SD	
Time urgency	2.52	1.26	2.86	1.28	2.33*
Inappropriate aggression and hostility	1.62	0.89	1.87	0.96	2.33*
Poliphasic behaviour	0.70	0.69	0.84	0.71	1.81
Goal directedness without proper planning	0.81	0.75	0.96	0.71	1.82
Personality	5.64	2.11	6.53	2.72	3.51**

*Significant at 0.05 level. * *Significant at 0.01 level

Bawa and Debnath, (1999) tried to explore personality characteristics of male gymnasts in Indian context. Personality plays important role in achieving high performance in all fields of life including games and sports and gymnastic. The investigation has been conducted to determine the relationships of various personality traits with competition performance in gymnastics. The other purpose of the study was to determine significance of difference in personality characteristics among high, mediocre, and low performers in competitive gymnastics.

It has been found that high performance group is more reserved, more sober, more stable, more tough-minded and more practical when compared with mediocre and low performance groups. The results also reveal that mediocre performance group is must tough-minded and more practical than low performance group.

Shukla et al. (1997) tried to explore the difference between elite and non-elite cricketers on their personality. The study results support the earlier findings that the elite athletes differed significantly between a successful and unsuccessful athlete on psychological factors and personality traits (Cratty, 1973., Mohoney & Avenier, 1977., Kamlesh 1983., 1989., Sharma & Shukla 1991).

On large comparative study of athletes and non-athletes, no single personality profile was found that distinguished athletes from non-athletes. However when the athletes were categorized by sport, several differences did emerge. Compared with non-athletes athletes who played team sports exhibited less abstract reasoning, more extroversion, more dependency, and less ego strength. Further compared with non-athletes, athletes who played individual sports displayed higher levels of objectivity, more dependency, less anxiety, and less abstract thinking (Schurr, et al., 1977).

Plausible justifications for the results of the present investigation are as follows.

- 1) Open skill category sport persons are more intelligent than closed skill category sport persons. Higher the intelligence, lower the scores on Type-A personality pattern. Therefore comparatively more intelligent open skill category sport persons' scores on Type-A personality pattern is significantly low.
- 2) Time urgency and inappropriate aggressions of open skill category sport persons are significantly low perhaps, due to high 'self-awareness'- an on going attention to one's own internal states.

Emotional intelligence

Table 5.61

Mean, Standard deviation and t-value of emotional intelligence based on skill category

Variable	Skill category				t- value
	Opening skill		Opening skill		
	Mean	SD	Mean	SD	
Self-awareness	23.14	2.89	22.32	3.34	2.25*
Self-regulation	19.03	3.87	18.89	3.66	0.32
Motivation	21.50	4.69	21.43	5.72	0.12
Empathy	22.85	3.37	23.49	3.03	1.75
Social skills	20.01	3.89	20.27	4.11	0.56
Emotional intelligence	106.53	13.71	106.40	12.07	0.08

*Significant at 0.05 level

Though the t-value of emotional intelligence (0.08) is lower than the table value proves that there is no significant difference between sport persons belongs to open skill and closed skill category sporting events based on emotional intelligence. One domain of emotional intelligence, 'self-awareness' (t' value- 2.25 significant at 0.05 level) differs statically for different skill categories. That means sport persons belong to open skill category are more able to monitor their own feeling and efficient to recognize a feeling as it happens and are aware of how they really feel about personal decisions.

Intelligence

Open skill category sporting events require comparatively more observations skills, decision-making, problem solving etc all belong to cognitive functioning of sport person closed skill category sport persons. This criteria is met by the sport persons belong to open skill category participated in the present investigation.

Table 5.62.

Mean, Standard deviation, t-value of intelligence of sport person based on skill category

Variable	Skill category				t- value
	Open skill (N=165)		Closed skill (N=139)		
	Mean	SD	Mean	SD	
Intelligence	112.33	8.92	109.31	11.63	2.51*

*Significant at 0 .05 level

The t-value (2.51) is significant at 0.05 level for the mean IQ of the two different categories of sport persons (table 5.62).

5.4.3 Personality type - wise analysis

Hypothesis 8

Significant differences exist between Type-A and Type-B sport persons on mental health, emotional intelligence and intelligence.

The results of the t-test analyses for the variable type-A personality pattern are discussed under three heads such as: mental health, emotional intelligence and intelligence.

Mental health

There is no significant mean difference between the groups of type-A and type-B sport persons on mental health or its components. Therefore it can be said that the difference in personality does not make any difference in the mental health of sport persons. The means, standard deviations and the t-values are presented in table 5.63.

Table 5.63

Mean, standard deviation and t-value of mental health based on skill category

Variable	Personality pattern				t- value
	Type-A (N=225)		Type-B (N=79)		
	Mean	SD	Mean	SD	
Attitude towards self	41.19	5.79	41.14	4.08	0.07
Self-actualization	45.96	4.94	45.77	4.56	0.29
Integration	45.36	4.93	45.96	4.09	0.97
Autonomy	44.15	4.65	43.05	4.70	1.80
Perception of reality	45.16	4.42	44.39	4.22	1.34
Environmental mastery	44.49	4.99	44.83	4.94	0.53
Mental health	226.31	19.44	265.15	15.99	0.48

Emotional intelligence

The results of t-test on the variable are shown in table 5.64.

Table 5.64

Mean, Standard deviation and t-value of emotional intelligence based on skill category

Variable	Personality pattern				t- value
	Type-A (N=225)		Type-B (N=79)		
	Mean	SD	Mean	SD	
Self-awareness	22.71	3.25	22.92	2.76	0.52
Self-regulation	18.69	3.95	19.76	3.09	2.19*
Motivation	21.51	5.59	21.35	3.78	0.23
Empathy	21.16	3.46	23.09	2.49	0.17
Social skills	20.01	4.19	20.44	3.52	0.82
Emotional intelligence	106.08	14.03	107.57	9.27	0.88

*Significant at 0 .05 level

Out of five components of emotional intelligence only one, i.e. self-regulation is found to have significant t-value ($P < 0.05$). On the other hand, type-A and type-B sport persons differ significantly on self-regulation. An examination of table 5.64 helps to conclude that type-B sport persons are higher on the variable compared to their type-B counter parts. Certain peculiar characteristics of type-A individuals like inappropriate aggression and hostility, goal directedness without proper planning etc might have reduced their ability to manage emotions, as it is revealed in a low mean of self-regulation.

Table 5.65

Mean, Standard deviation, t-value of intelligence of sport person based on skill category

Variable	Personality pattern				t-value
	Type-A (N=225)		Type-B (N=79)		
	Mean	SD	Mean	SD	
Intelligence	110.66	9.86	111.77	11.64	0.82

It can be understood from the insignificant t-value (0.82) that there is no significant difference between type-A and type-B sport persons on their intelligence. Table 5.65 depicts the means, standard deviations of the groups along with the t-value.

Based on the above findings hypotheses 6,7 and 8 are partially accepted.

5.4.4 Results of t-test analysis: An overview

t-tests were employed to find out the difference between:

1. Male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
2. Open skill and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
3. Type-A and Type-B sport persons on mental health, emotional intelligence and intelligence

An overview of the results revealed the significant differences between:

1. Male and female sport persons on self-actualization, integration, perception of reality, environmental mastery, overall mental health, inappropriate aggression and hostility, overall type-A personality, motivation, empathy, overall emotional intelligence and intelligence.
2. Open skill and closed skill category sport persons on time urgency, inappropriate aggression and hostility, overall type-A personality pattern, self-awareness, and intelligence.
3. Type-A and type-B sport persons on self-regulation.

Independent and interaction
effects of sex, Type-A personality
pattern and sport related
variables on mental health

5.5 Three - way ANOVA

In this section the effects of sex, personality and sport related variables – skill category, level of participation, level of experience, family sport status, punctuality, self-practice and perceived self competence – on mental health of sportpersons have been analysed.

The classificatory variables (sex, personality, and sport related variables) were tested for missing cells. It has been found that in some combinations certain cells are missing and this may suppress the higher order interaction. But SPSS (Statistical Package for Social Sciences) continued the analysis. So the investigator decided to make use of three-way ANOVA, even though same variables are repeatedly entering into the calculation.

Hypothesis 9

Significant main and interaction effects exist for the variables sex, and Type-A personality pattern and selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health of sport persons.

The hypothesis was tested to understand the role of sex personality and sport related variables on mental health seven different combinations of the above said variables were subjected to three- way ANOVA. Different versions of three- way ANOVA were employed on these combinations according to the nature of combinations. The results are explained in detail for each of the seven combinations as follow.

5.5.1 Mental health based on sex, personality type, and skill category

In order to study the main and interaction effects among the subgroups based on the variables under study on mental health, the data were put into 3-way analysis of variance. 2 x 2 x 2 three- way ANOVA was employed. The results of three- way ANOVA done on components and total mental health are presented in the table 5.66.

Table 5.66

Results of three-way ANOVA of mental health for different levels of sex, skill category and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX (A)	SKILL CATEGORY (B)	PERSONALITY TYPE (C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	2.38	0.01	0.04	0.40	0.01	0.18	0.00
Self actualization	6.80**	0.08	0.02	0.06	0.23	0.78	0.11
Integration	7.32**	2.99	0.23	0.00	0.00	0.59	0.01
Autonomy	0.18	1.90	3.66	0.06	0.01	0.00	1.33
Perception of reality	10.31**	4.53*	3.74	0.24	0.54	0.13	0.56
Environmental mastery	22.16**	4.08*	0.03	1.71	0.33	0.51	0.64
Mental Health	13.90**	3.54	1.16	0.07	0.01	0.44	0.03

*Significant at 0.05 level

**Significant at 0.01 level

Three-way interaction

The results of the three-way interaction of the variables sex, skill category and the personality type are given at the last part of the table 5.66. An overall scrutiny of the table 5.66 helps to conclude that in spite of the independent effects of the variables sex and skill category on certain aspects of mental health, there is no statistically significant interactive effect of sex, skill category and personality type on mental health or its subcomponents.

Two-way interaction

The results of the two-way interaction of all the possible combinations of the three variables – sex, skill category and personality type - are also presented in table 5.66. The possible combinations and results are discussed below.

1) Sex–skill category

Though there is independent influence of sex and skill category on certain aspects of mental health, when clubbed together these two variables (male open category, female open category, male closed category, and female closed category) have significant influence on neither the components of mental health nor its total score.

2) Sex-personality type

None of the F-values in the table is statistically significant for the interaction of sex and personality type which means any of the subgroups – Type- A males, Type-B males, Type-A females and Type-B females – do not differ significantly on mental health.

3) Skill category – Personality type

Personality doesn't make any noticeable influence combined with two types of skill category on mental health of sport persons. All the F - values fail to meet the criterion to be significant as shown in table 5.66.

Main Effects

The main effect of the variables sex on the components of mental health and the overall mental health is indicated by F-values given in table 5.66. From the table it is evident that four components of mental health viz., 'self actualization', 'integration' 'perception of reality', 'environmental mastery' and overall mental health have been influenced by variations in sex. The corresponding F-values are 6.80, 7.32, 10.31, 22.16 and 13.90 respectively. All these values are significant at 0.01 level. A clear picture of the mean differences is given in table 5.67 where the cells' mean is given for each category.

Table 5.67

Mean of components of mental health for male and female sport persons

Variable	Sex	
	Male	Female
Self-actualization	46.58	45.15
Integration	46.22	44.73
Perception of reality	45.66	44.17
Environmental mastery	45.80	43.21
Mental Health	269.60	261.97

The mean score of self-actualization is high (mean,46.58) for the male sportspersons than the females (mean, 45.15).

On the variable 'integration' males scored high (mean 46.22) than females (mean, 44.73), 'perception of reality' (mean 45.66) and environmental mastery(mean, 45.80) are also high for male sport persons than the females (44.17 and 43.21 respectively)

Above all, the overall mental health of male sport persons is high (i.e., 269.60) than the female counterparts (i.e., 261.97). All these results are supported by the results of t- tests which is described in section 5.4

The main effect of the variable skill category is given in table 5.66 indicated by the F-values. Perception of the reality and environmental mastery are the two aspects of mental health and influenced by the variation in skill category table 5.68 gives a clear idea about the scores of corresponding variables in relating with open skill and closed skill category sport persons score significantly high.

Table 5.68

Mean of components of mental health for open skill and closed skill category sport persons

Variable	Skill category	
	Open skill	Closed skill
Perception of reality	45.38	44.46
Environmental mastery	45.08	44.99

The mean score by the open skill category sportspersons are 45.08, and 45.08 for 'perception of reality' and 'environmental mastery' respectively and that of the closed skill category sportsperson are 44.46 and 44.99 respectively.

These results indicate that skill category sport persons like volleyball player, football players, basketball players etc. enjoy more healthy 'perception of the world' which is free from need distortion and social sensitivity than the closed skill counterparts, that include sprinters, swimmers, jumpers, etc.

The nature the sporting event may influence another aspect of mental health i.e., environmental mastery. This aspect of mental health is also high in open skill category sportspersons. They are more adequate in interpersonal relations, more efficient in meeting situational requirements and more efficient in problem solving than the closed skill sport persons. The mean score of environmental mastery by open skill sports persons is 45.05 that of the closed stall category sport persons is 44.99.

The main effect of Type-A personality is significant on neither the components nor the aggregate of mental health. This means that the change in personality type, type-A and type-B, does not make any notable variation in the mental health of sport persons. This finding is also supported by the negligible correlation between the scores of Type-A personality pattern and mental health discussed in the section 5.1.

5.5.2 Mental health based on sex, levels of participation, and personality type

In order to study the main and interactive effects of sex, level of participation and personality type on mental health of sport persons $2 \times 3 \times 2$ three-way ANOVA was performed. The results of three-way ANOVA on components and overall mental health are presented in the table 5.69.

Table 5.69

Results of three-way ANOVA of mental health for different levels of sex, participation and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX(A)	LEVELS OF PARTICIPATION (B)	PERSONALITY TYPE(C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	2.39	0.66	0.00	0.66	0.00	1.72	1.17
Self actualization	6.77**	0.60	0.12	4.47*	0.12	0.27	3.04*
Integration	7.43**	0.92	0.01	0.92	0.01	1.73	0.73
Autonomy	0.11	4.47*	0.01	0.59	0.01	2.27	0.72
Perception of reality	10.49**	2.30	0.83	2.30	0.83	2.28	1.07
Environmental mastery	21.62**	0.16	0.02	0.16	0.02	1.09	0.87
Mental Health	13.92**	0.75	0.12	0.75	0.02	0.86	1.09

*Significant at 0.05 level

**Significant at 0.01 level

Three-way interaction

All the F-values for the combination of three variables sex, levels of participation and personality type on mental health and its components are shown in the table 5.69. The particular combination of the variables could make significant influence (F-value 3.04, significant at 0.05 level) only on self-actualization.

The nature of interaction can be understood by examining the mean given for each of the cells produced by the combinations (table 5.70).

Table 5.70

Mean for different levels of sex, personality type, and levels of participation

Variables				Levels of participation.		
				State	National	International
Sex	Male	Personality type	Type A	45.70	47.31	46.50
			Type B	46.40	45.74	53.00
	Female	Personality type	Type A	46.75	44.47	43.50
			Type B	46.27	45.05	35.00

It is interesting to note that male international sports persons with Type-B personality pattern have scored the highest, a mean of 53.00 on 'self actualization', whereas female internationals with Type-B personality pattern have scored the lowest i.e., a mean of 35.00. A comparison of these two scores enables to say that Type-B international male sport persons' motivational process, self-concept and the utilization of basic equipment, revealed by self-actualization, are higher than that of the female counterparts.

Two-way interaction

Table 5.69 gives the results of all the possible combinations of the three variables sex, levels of participation and personality type.

1) Sex - Level of participation

As already discussed sex has significant main effect on self actualization, and when it is clubbed together with levels of participation, still the combination has interactive effect on self actualization. The F-value is 4.47, which is significant at 0.05 level. An accurate understanding of the interaction can be revealed by the examination of mean given for each of the cells of combination presented in table 5.71.

Table 5.71

Mean of Self-actualization for different levels of sex, and levels of participation

Variable		Level participation		
		State	National	International
Sex	Male	45.95	46.88	47.80
	Female	46.64	44.60	42.29

It is interesting to note that male participants of international sporting events are having highest value on self-actualization whereas the female participants of international sporting events have the lowest score on the same variable. The effect of sex and levels of participation on self-actualization is clearer when these variables are mixed with Type-A personality pattern i.e. three-way interaction

2) Sex – Personality type

There is no significant F-values identified for the interaction of sex and Type-A personality pattern on mental health or its subcomponents.

3) Levels of participation – Personality Type

Levels of participation has independent influence on at least one of the components of personality - 'autonomy'. However, it fails to make an impact on neither 'autonomy' nor any other components when it is blended with personality type. The above said is evident from the F- values given for 2 way-interaction.

Main effects

The main effects of the variable sex and personality type on mental health and its components are indicated by F- values given in the table 5.69. From the table it is clear that significant main effect of sex on certain subcomponents of mental health is same as shown in table 5.66. The effect of personality type on mental health and its components are shown in table 5.69, F- values are not significant for any of them. These results also support the results of the three-way ANOVA performed for the previous combination of variables.

Among the components of mental health 'autonomy' is influenced by levels of participation. For a better understanding the mean of groups based on three levels of participation (state, national and international) are given in the table 5.72.

Table 5.72

Mean of autonomy for state, national and international level participation

Variable	Level of participation		
	State	National	International
Autonomy	43.10	44.10	46.83

It is clear from the table that international sport persons scored high (46.83) on 'autonomy' than the other two groups, 43.10 and 44.10 are the mean scores of state and national level participants respectively. These results are also supported by the results of MANOVA described in section 5.3. It is clear from the means that the international sport persons are more autonomous than the other two groups.

5.5.3. Mental health based on sex, levels of experience, and personality type

To find out the main effects and interaction, of sex, level of experience and personality type on mental health and its components, 2 x 3 x 2 three-way ANOVA was employed. All the results of main effects, 2-way and 3-way interactions are presented in table 5.73.

Table 5.73

Results of three-way ANOVA of mental health for different levels of sex ,experience and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX (A)	EXPERIENCE (B)	PERSONALITY TYPE (C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	2.30	0.30	0.02	0.88	0.01	0.19	3.78*
Self actualization	7.37**	1.50	0.15	3.89*	0.55	1.25	1.14
Integration	7.87**	1.31	0.41	0.86	0.01	0.33	0.55
Autonomy	0.21	0.97	3.51	1.18	0.01	0.63	0.12
Perception of reality	10.76**	1.07	2.74	0.75	0.35	1.05	0.27
Environmental mastery	23.63**	2.59	0.00	1.89	0.46	0.49	1.41
Mental Health	4.61**	0.93	0.75	1.98	0.07	0.70	1.71

*Significant at 0.05 level

**Significant at 0.01 level

Three-way interaction

Sex in combination with personality type and levels of experience influences attitude towards self of sport persons. F-value being 3.78, a statistical significance at 0.05 level is identified. The nature of the interaction is more transparent when the means are concerned. Table 5.74 gives an account of mean of the possible twelve subgroups by the combination of sex, levels of experience and personality type.

Table 5.74

Mean of attitude towards self for different levels of sex, personality type, and levels of experience

Variables				Levels of experience		
				Novice	Moderately Experienced	Highly Experienced
Sex	Male	Personality type	Type A	41.71	40.72	42.17
			Type B	42.43	43.86	40.85
	Female	Personality type	Type A	40.81	43.44	39.97
			Type B	41.38	38.17	41.00

The group of Type-B male sportspersons with moderate experience is found to have highest mean(43.86) on ‘attitude towards self’, while Type- B female sport persons with moderate experience has lowest mean(38.17) for the same variable.

Two-way interaction

Sex-levels of experience, sex-personality type, and levels of experience – personality type are the three possible combinations scrutinized for 2-way interaction.

1) Sex-levels of experience

When the levels of experience are studied on the background of sex, it is evident that levels of experience can influence 'self-actualization'. The F- value for this influence is 3.89, which is significant at 0.05 level. But the same combination cannot make any influence on any of the other components of mental health. Table 5.75 further clarifies the interaction.

Table 5.75

Mean of self-actualization for different levels of sex, and levels of experience

Variable		Levels of experience		
		Novice	Moderately experienced	Highly experienced
Sex	Male	46.21	46.28	46.86
	Female	47.10	44.86	44.27

It is apparent in the table that female novices who, have comparatively less sporting experience have scored highest (mean 47.10) on the variable 'self-actualization'. The lowest value on the same variable has obtained by the specific group of sport persons, that is, highly experienced (mean 44.27) females.

In spite of the fact that highly experienced females entered the world of sport earlier than the novice, what they do with their life matters where the novices do excel.

2) Sex-Personality type

The variables sex and personality type are also entered in a combination repeatedly for the ANOVA, still the combination fails to produce an effect on the variables under consideration.

3) Levels of experience – Personality type

Type-A or Type-B sport persons with varying levels of experience do not differ significantly on mental health or its six components. The F-values given in the table 5.73 for the combination are not significant.

Main Effects

There is no notable difference in the F-values for personality type on the variables under study while significant main effect is evident on certain variables. The effect of these variables have described earlier. The second variable, levels of experience alone is inadequate to make significant influence on mental health. The F- values presented under main effects for ‘levels of experience’ reveals the same.

5.5.4 Mental health based on sex, family sport status and personality type

The ANOVA applied to unravel the main effects and interactive effects of variables sex, family sport status and personality type was 2x 3 x 2 three- way ANOVA. Results of the analysis are presented on table 5.76.

Table 5.76

Results of three-way ANOVA of mental health for different levels of sex, family sport status and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX(A)	FAMILY BACKGROUND (B)	PERSONALITY TYPE(C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	1.99	1.72	0.71	1.06	0.03	0.08	0.93
Self actualization	6.24*	1.57	0.36	0.40	0.03	2.23	0.82
Integration	7.36**	0.07	0.40	0.20	0.46	3.04*	1.02
Autonomy	0.75	5.19**	2.66	0.23	0.14	1.09	0.32
Perception of reality	8.16**	2.21	2.29	0.01	1.06	0.88	0.31
Environmental mastery	20.58**	0.39	0.02	0.93	0.03	1.75	6.58*
Mental Health	11.864**	3.09*	0.68	0.16	0.03	2.33	1.49

*Significant at 0.05 level

**Significant at 0.01 level

Three-way interaction

The computed F-values for the three-way interactions among the variables are given in the table 5.76, a significantly high value of F-is found for the variable 'environmental mastery'. The F-value (6.58) is significant at 0.05 level. The nature of the interaction can be traced out from table 5.77 in which the mean is given for each of the cells of various combinations of the independent variables.

Table 5.77

Mean of environmental mastery for different levels of sex, personality type, and family sport status

Variables				Family sport status.		
				Poor	Moderate	Sound
Sex	Male	Personality type	Type A	45.82	45.17	45.97
			Type B	47.06	38.00	43.62
	Female	Personality type	Type A	43.34	-	42.55
			Type B	41.92	45.80	44.53

Table 5.77 shows that one cell is missing in the combination of Type-A females with moderate family sport status. Type-B male sport persons having no relatives as sport persons secured the highest mean for 'environmental mastery'. And the lowest mean is for the group of Type- B male sport persons having distant relatives as sport persons. The latter is poor in problem solving, adjustment, inadequate in their work than the former.

Two-way interactions

1) Sex-family sport status

Both the variables sex and family sport status have its own independent influence on some of the variables under consideration. But, when two variables are joined together there is no significant influence produced.

2) Sex-personality type

The repeated analysis with the variables sex and personality type continues to produce same results as discussed earlier.

3) Family sport status – personality type

While family sport status alone can influence the dependent variable autonomy, its combination with personality type could not affect 'autonomy' but 'integration'. The F- value for the same is 3.04, which is significant at 0.05 level. Mean of 'integration' for different levels of personality type and family sport status are given in the table of 5.78.

Table 5.78

Mean of integration for different levels of personality type, and family sport status.

Variable		Family sport status.		
		Poor	Moderate	Sound
Personality	Type A	45.41	46.05	45.14
	Type B	45.67	39.50	46.60

There is much mean difference on 'integration' between the group of Type-B sportspersons with sound family sport status and Type-B sport persons with moderate family sport status. All the other possible groups seem to be approximately equal in means.

It can be asserted that Type-B sport persons having father, mother, brothers, or sisters as sport persons irrespective of their sex are more integrated cognitively, better out look on life, and more resistant to stress – 'integration', than the group of Type-B sport persons having distant relations as sport persons.

Main effects

F-values show two significant independent effects on 'autonomy' and overall mental health. Mean of poor, moderate and sound family sport status groups on 'autonomy' and mental health are presented in table 5.79.

Table 5.79

Mean of component of mental health for sport persons with poor, moderate, and sound family sport status

Variable	Family sport status		
	Poor	Moderate	Sound
Autonomy	44.55	44.15	42.66
Mental health	267.77	261.89	262.85

The mean of the three groups of 'autonomy' are 44.55, 44.15 and 42.66 respectively and that of the mental health are 267.77, 261.89 and 262.85 respectively. A notable increase in the mean score of 'autonomy' is prominent in the reverse order from the sound to poor sport family status is an indication that 'autonomy' is high for the sport person who doesn't have any sport person as

family member. The absence of sport persons in the family might cause high initiation and responsibility in these sport persons to equip them more autonomous. Total score of mental health is also high for the same group of sport person.

5.5.5 Mental health based on sex, punctuality and personality type

The independent and combined effects of the variables, sex punctuality and personality type were analyzed using 2 x 3 x 2 three-way ANOVA. Results of the analysis are shown in table 5.80.

Table 5.80

Results of three-way ANOVA of mental health for different levels of sex, punctuality and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX(A)	PUNCTUALITY(B)	PERSONALITY TYPE(C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	2.11	1.35	0.01	2.55	0.02	0.07	2.53
Self actualization	5.45*	11.74**	0.22	0.04	0.42	0.00	3.18
Integration	5.98*	1.70	0.63	0.30	0.01	0.77	0.63
Autonomy	0.45	6.24*	2.72	0.03	0.13	1.29	0.58
Perception of reality	9.06**	2.12	2.21	0.94	0.41	1.19	0.12
Environmental mastery	19.13**	4.98*	0.05	0.30	0.17	0.00	0.16
Mental Health	11.56**	10.72**	0.42	0.99	0.05	0.09	1.75

*Significant at 0.05 level

**Significant at 0.01 level

Three-way interaction

An overall evaluation of table 5.80 gives an idea that punctuality in combination with one of the variables, sex or personality type or combined with both the variables at a time could not make effect on mental health of sport persons. The above said is evident from the F-values for three-way interactions for mental health and its components that F-values come under the table values to be statistically significant.

Two-way interaction

The three variables sex, punctuality and personality type were combined to examine whether there is any two-way interaction. The possible combinations of the variables are as follow.

1) Sex-punctuality

Independently the variables sex and punctuality have effects on mental health and some of its components, but combined together, these variables fail to elicit any impact. None of the F-values shown in table 5.80 for sex – punctuality interaction is statistically significant.

2) Sex – personality type

Again sex – type combination is unable to create any impact on mental health of sport persons, which has been described earlier.

3) Punctuality – personality type

No significant interaction is found between punctuality and personality type on mental health, punctuality alone could do it, however.

Main effects

The results represented by the F-values in the table for the main effect of sex on mental health and its components is identified as same as described earlier.

Out of six components of mental health, three are found to be significantly influenced by the variable punctuality. The components are self-actualization (F, 11.74); 'autonomy' (F, 6.24) and 'environmental mastery' (F, 4.98). The overall mental health is also significantly differs with variation in the levels of punctuality. (F, 10.72)

A scrutiny of the tale 5.81 gives a clear idea about the variation of the dependent variables respective of the mean differences.

Table 5.81

Mean of component of mental health for sport persons with low, moderate, and high punctuality

Variable	Punctuality		
	Low	Moderate	High
Self-actualization	45.00	43.51	46.63
Autonomy	43.00	41.91	44.38
Environmental mastery	46.50	43.54	45.10
Mental health	260.71	267.50	268.70

The mean of high punctual sport persons is high on self-actualization (mean, 46.63) than the moderate punctual sport persons (mean, 43.51) and low punctual (mean, 45.00) sport persons. Likewise, they are also high on

‘autonomy’ than the other two groups, low (mean, 43.00) and moderate punctual (mean, 41.91).

But low punctual sport persons are high on ‘environmental mastery’ (mean 46.50) than the other two groups viz. moderate punctual (mean 43.54) and high punctual (mean 45.10).

When overall mental health is considered, high punctual sport persons are more mentally healthy (mean, 268.70) than moderate punctual (mean, 267.50) and low punctual sport persons (mean 260.71). The above discussed results are complimented by the results of multivariate analysis of variance (MANOVA) discussed in section 5.3.

The main effect of personality type remains constant as it could not emit any influence on mental health of sport persons.

5.5.6 Mental health based on sex, self practice, and personality type

Another variable entered between the sex-personality type duos is self-practice. To understand the interactive effect of the variables 2 x 3 x 2 three way-ANOVA was employed. Results are depicted in table 5.82.

Table 5.82

Results of three-way ANOVA of mental health for different levels of sex, self-practice and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX(A)	SELF PRACTICE(B)	PERSONALITY TYPE(C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	2.08	1.44	0.04	0.03	0.00	0.00	1.40
Self actualization	7.01**	0.06	0.31	1.82	0.11	0.77	0.49
Integration	7.67**	0.77	0.45	0.15	0.04	0.64	0.55
Autonomy	0.18	0.04	3.07	0.04	0.01	0.64	0.35
Perception of reality	9.46**	2.13	2.72	0.05	0.75	0.31	0.27
Environmental mastery	21.53**	0.37	0.03	0.13	0.01	0.69	0.03
Mental Health	13.49**	0.05	0.71	0.26	0.02	0.96	0.16

**Significant at 0.01 level

Three-way interaction

The three- way interaction of the variable is examined only to find there is no interactive effect of the variables sex, self-practice and personality type on mental health or its components. All the F-values of the three- way interactions are found to be insignificant.

Two-way interaction

When the variable self-practice is introduced in the pair of sex and personality type, the following are the combinations possible.

1) Sex – Self-Practice

Self-practice not only could not independently influence the dependent variable but also unable to make any combined effect with sex. All the F- ratios calculated for these combinations are not significant.

2) Sex - Personality type

Sex-personality type combination repeatedly entered in the analysis the F-values for this combination are not significant.

3) Self-practice - Personality type

As the variable ‘self-practice’ does not have any influence on mental health, the same result is produced when it is clubbed with personality type. The effect is evident in the table 5.82 as shown by the insignificant F-values.

Main effects

The way the variable ‘sex’ influences mental health is also confirmed by table 5.82 too, as it did earlier.

Sport persons doing less, moderate, and relatively high self-practice differ significantly on none of the components of mental health. Since the F- value (0.05) for overall mental health is also not significant, it has to be denoted that the three groups of sport persons based on self-practice do not differ significantly on mental health. The results of three-way ANOVA is complimented by the results of MANOVA narrated in section 5.3.

As in the case of the variable sex, personality type also keeps its status of influence on dependent variable as unchangeable, which is revealed repeatedly by the results of main effects in different three-way ANOVA tables.

5.5.7 Mental health based on sex, perceived-self competence, and personality type

For data analysis $2 \times 3 \times 2$ three-way ANOVA was applied and the results are plotted in table 5.83.

Table 5.83

Results of three-way ANOVA of mental health
for different levels of sex, self-evaluation and Type-A personality pattern

VARIABLE	MAIN EFFECTS			INTERACTION			
				TWO-WAY INTERACTION			THREE-WAY
	SEX(A)	SELF EVALUATION(B)	PERSONALITY TYPE(C)	A-B	A-C	B-C	A-B-C
	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value	F-Value
Attitude towards self	1.73	2.45	0.23	0.84	0.01	0.76	0.71
Self actualization	6.14*	0.01	0.48	4.36*	0.14	0.26	2.26
Integration	6.77**	0.02	0.31	0.02	0.30	2.94	1.71
Autonomy	0.85	2.14	3.55	0.36	0.02	0.43	1.65
Perception of reality	8.31**	0.96	2.84	2.18	0.55	0.14	2.67
Environmental mastery	18.88**	1.65	0.02	1.00	0.02	3.84	4.53*
Mental Health	10.95**	2.22	1.25	0.01	0.06	1.18	3.12

*Significant at 0.05 level

**Significant at 0.01 level

Three- way interaction

An overall examination of the table 5.83 shows that the two-way combination sex and perceived self-competence and the three-way combination of sex, perceived self-competence and personality type have certain effects on some of the mental health variables.

‘Environmental mastery’ is the variable influenced by the trio sex, perceived self-competence, and personality type. The F-value is 4.53, which is significant at 0.05 level. Table 5.84 shows the mean of each of the cells in the possible combinations.

Table 5.84

Mean of environmental mastery for different levels of sex, perceived self competence, and personality type

Variables				Perceived self competence.		
				Low self-competence	Moderate self - competence	High self competence
Sex	Male	Personality type	Type A	43.40	44.82	47.43
			Type B	—	47.00	44.86
	Female	Personality type	Type A	38.67	43.27	43.29
			Type B	—	43.13	44.25

It is found that two cells are missing i.e. Type-B low competent male and Type-B low competent female. The highest mean (47.43) obtained by the group is Type-A high competent male sportspersons. The lowest mean (38.67) obtained for the group of Type-A low competent female sport persons. The results point out that too specifically the male sportspersons with Type-A personality who

perceive themselves as high competent are likely to be better problems solvers, more sociable and have better control over the environment than the Type-A female sport persons who perceive themselves as low competent.

Two-way interaction

Sex-perceived self-competence, sex-personality type and perceived self-competence–personality type are the possible combinations with the three variables sex, perceived self-competence and personality type. All these combinations are examined for identifying the interactive effect.

1) Sex - Perceived self-competence

The F-value (4.36) of the combination for the variable ‘self actualization’ is statistically significant at 0.05 level. No other F-values are statistically significant. Table 5.85 shows the mean of the cells in the combinations of self-actualization.

Table 5.85

Mean of Self-actualization for different levels of sex, and levels of perceived self-competence

Variable		Perceived self-competence		
		Low self-competence	Moderately self-competence	Highly self-competence
Sex	Male	44.80	46.15	47.18
	Female	41.00	45.62	44.36

Female sport persons perceived themselves as low competent, and has the lowest mean (41.00) on self-actualization whereas male sport persons perceived themselves as high competent and they have the highest mean (47.18).

The high competent group of male sport persons obtained high on 'self actualization' followed by moderate competent (mean 46.15), and low competent, (mean 44.80) group. In case of females moderate competent group scored higher(mean, 45.62) on 'self-actualization' than high competent (mean 44.36) and low competent group (mean 41.00). The high competent male sport persons are more self-accepting, self-respected and self-esteemed than the low competent female counter parts.

2) Sex-Personality type

The results of the two-way interaction of this combination are not significant as reflected by the low F-values.

3) Perceived self-competence – Personality type

The variables perceived self-competence and personality type have no main effect on dependent variables, no interactive effect as well. All the F-values of the combination on various mental health variables are too small to be considered as statistically significant.

Main effects

Among the three variables: sex, perceived self-competence and personality type, only sex is found to have main effect on the variables under study—mental health and its components. 'self-actualization', 'integration', 'perception of reality' and 'environmental mastery' along with overall mental health of sport persons are influenced by the variation in sex.

Perceived self-competence do not make any independent impact on the dependent variables. These results are supported by the results of MANOVA by perceived self-competence as explained in section 5.3.

Type-A personality pattern is another variable repeatedly found to have virtually no independent effect on the dependent variables.

Based on the above findings hypothesis 9 is partially accepted.

5.5.8 Results of Three-Way Analysis Of Variance: An Over View

Three-Way Analyses were employed to test the independent and interactive Effects of sex, personality and sport related variables – skill category, level of participation, level of experience, family sport status, punctuality, self-practice and perceived self-competence – on mental health and its components. Combinations of classificatory variables obtained by maintaining the variables sex and personality type as constant, which was continuously combined with other sport, related variables. An overview of the results helps to conclude that out of seven groups of three-way interactions analyzed, four of them found to have three-way interactions on some of the components of mental health as follows.

Three-way interactions

1. Interaction of sex, Type-A personality pattern and levels of participation on self-actualization.
2. Interaction of sex, Type-A personality pattern and levels of experience on attitude towards self.
3. Interaction of sex, Type-A personality pattern and levels of family sport status on environmental mastery.
4. Interaction of sex, Type-A personality pattern and levels of perceived self-competence on environmental mastery

Two-way interactions

1. Interaction of sex, and levels of participation on self-actualization.

2. Interaction of sex, and levels of experience on self-actualization
3. Interaction of Type-A personality pattern and levels of family sport status on integration
4. Interaction of sex and levels of perceived self-competence on self-actualization.

Main effects

1. Main effects of sex on self-actualization, integration, perception of reality, environmental mastery, and over all mental health.
2. Main effects of skill category on perception of reality and environmental mastery.
3. Main effect of levels of participation on autonomy.
4. Main effects of levels of family sport status on autonomy and overall mental health
5. Main effects of levels of punctuality on self-actualization, autonomy, environmental mastery and overall mental health.

Chapter 6

Summary, Conclusions and Suggestions

Sports and games are gaining importance in human life day by day. All other factors—biological and sociological being equal, psychological conditioning of an athlete decidedly determines his/her success or failure in competition. No training in the sport field is complete without reference to the psychological study and the psychological training of athletes. An overview of the studies conducted in the arena of sport psychology makes the sense that majority of the studies on the primary goal of the discipline – performance enhancement. Very few studies are concerned with the athlete as a 'whole' person. An in-depth psychological analysis of a sport person considering cognitive, affective and behavioural perspectives seems to be more logical and demanding.

The study of *personality* and its relationship to sport can assist the coach and the teacher in the selection of players, in the guidance of those who seek help in choosing a sport, in teaching effectively, and in understanding the behaviour of those who come under their leadership.

Sport has always been a passionate phenomenon requiring tremendous emotional investment and focussed to excel. The highly charged realm of sport is identified as an excellent place to study the phenomenon of emotion and perspective. Commenting on "emotion and perspective in sport" Botterill and Brown, (2002) suggest that Dr. Daniel Goleman's book "*Emotional Intelligence*", sensitise us how dramatically the topic of emotions, emotional development, emotional management, and emotional health has been neglected in a variety of fields. Clearly as a field in which emotion and perspective play – such a large part, we have major responsibility in studying the phenomena and identifying important practical implications.

In fact, *intelligence* and motor activity are the basic ingredients of the harmonious development leading to the 'wholeness' of man. The results of most of the studies conducted on motor and intellectual aspects of athletes "are more

suggestive than substantial". The studies are often based upon clinical observations rather than "hard data" while the data that have been collected, have not always been accorded acceptable statistical treatment (Kamlesh, 1983).

Participation in sporting events are related to bodily balance and psychological stability. The impact of sport and exercise on *mental health* is a longstanding issue. All the above, a study inquiring how these variables- personality, emotional intelligence, and intelligence are interrelated with a sport person's mental health would help to balance the outweighed performance oriented research tradition, to a certain extent. So the present investigation was an attempt to find out the psychological correlates of mental health of sport persons.

5.1 Objectives of the study

The following were the objectives set for the present investigation:

1. To find out whether there exist any relationship among mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.
2. To find out whether there exist any relationship among mental health, emotional intelligence and intelligence of Type-A sport persons.
3. To find out whether there exist any relationship among mental health, emotional intelligence and intelligence of Type-B sport persons.
4. To predict mental health of sport persons by means of predictor variables, Type-A personality pattern, emotional intelligence and intelligence.
5. To find out the influence of selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.

6. To find out the difference between male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
7. To find out the difference between open and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
8. To find out the difference between Type-A and Type-B sport persons on mental health, emotional intelligence and intelligence.
9. To find out the main and interaction effects for the variables sex, Type-A personality pattern and selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health of sport persons.

5.2 Hypotheses

The following were the Hypotheses set for the present investigation:

1. Significant relationships exist among mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.
2. Significant relationships exist among mental health, emotional intelligence and intelligence of Type-A sport persons.
3. Significant relationships exist among mental health, emotional intelligence and intelligence of Type-B sport persons.
4. Mental health of sport persons can be predicted by means of predictor variables, Type-A personality pattern, emotional intelligence and intelligence.
5. Significant differences exist among the groups based on sport related variables such as, levels of participation, experience, family sport status,

punctuality, self-practice, and perceived self-competence on the variables mental health, Type-A personality pattern, emotional intelligence and intelligence

6. Significant differences exist between male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
7. Significant differences exist between open and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence.
8. Significant differences exist between Type-A and Type-B sport persons on mental health, emotional intelligence and intelligence.
9. Significant main and interaction effects exist for the variables sex, and Type-A personality pattern and selected sport related variables such as, levels of participation, experience, family sport status, punctuality, self-practice, and perceived self-competence on mental health of sport persons.

5.3 Sample

The sample of the study consisted of 304(161male and 143female) sport persons belonging to Sports Authority of India's Sports Training Centres (STC) situated in Kerala State. Area sampling technique was used to collect the data. The total sample constituted of sport persons belongs to different sport categories such as closed (N= 139) and open skill category (N =165). The age range of the subjects was between 15 and 24 years (mean, 17.51 and standard deviation, 1.83).

5.4 Tools

The tools included those which had been developed and standardized by the experts in the field and by the investigator herself. The measures employed were:

5.4.1 Background Information Schedule

5.4.2 Self-rating scales

5.4.3 Mental Health Status Scale (Gireesan and Sam Sanandaraj, 1988)

5.4.4 A scale of Type –A personality Pattern (Robert et. al, 1998)

5.4.5 Emotional Intelligence Scale For Sport Persons (Rajitha and Jayan, 2003) (EISS)

5.4.6 Advanced Progressive Matrices (Raven, 1989)(APM)

5.5 Statistical analyses

The statistical analyses adopted for the present investigation are as follows:

5.5.1 Correlational Analysis

5.5.2 Multiple Regression Analysis

5.5.3 Multivariate Analysis of Variance (MANOVA)

5.5.4 t-Test Analysis

5.5.6 Three-Way Analysis of Variance (ANOVA)

5.6 Major findings

The following are the major findings of the present investigation.

Relationships of the variables on total sample

1. There is no significant relationship between mental health and type-A personality pattern of sport persons.

2. There is significant positive relationship between mental health and emotional intelligence of sport persons.
3. There is no significant relationship between mental health and intelligence of sport persons.
4. There is significant negative relationship between Type-A personality pattern and emotional intelligence of sport persons.
5. There is significant negative relationship between Type-A personality pattern and intelligence of sport persons.
6. There is no significant relationship between emotional intelligence and intelligence of sport persons.

Relationships of the variables on type-A sport persons

7. There is significant positive relationship between mental health and emotional intelligence of Type-A sport persons.
8. There is significant positive relationship between mental health and intelligence of Type-A sport persons.
9. There is no significant relationship between emotional intelligence and intelligence of Type-A sport persons.

Relationships of the variables on type-B sport persons

10. There is significant positive relationship between mental health and emotional intelligence of Type-B sport persons.
11. There is no significant relationship between mental health and intelligence of Type B sport persons.
12. There is no significant relationship between emotional intelligence and intelligence of Type-B sport persons.

Predictors of mental health of sport persons

13. The variables that could predict mental health of sport persons are social skills, self-awareness, and motivation and goal directedness without proper planning.

Influence of sport related variables on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.

14. Significant differences exist among the groups based on different levels of sport participation on the variables, autonomy, motivation, and overall emotional intelligence.
15. Significant differences exist among the groups based on different levels of experience on the variables, inappropriate aggression and hostility, type-A personality pattern, self-regulation, social skills and overall emotional intelligence.
16. Significant differences exist among the groups based on different levels of family sport status on the variables, autonomy, and overall mental health.
17. Significant differences exist among the groups based on different levels of punctuality on the variables, self-actualization, autonomy, environmental mastery, overall mental health, self-awareness, social skills, and overall emotional intelligence.
18. There is no significant difference exist among the groups based on different levels of self practice on the variables, mental health, type-A personality pattern, emotional intelligence, and intelligence.
19. Significant differences exist among the groups based on different levels of perceived self-competence on the variables, polyphasic behaviour, type-A personality pattern, self-regulation and emotional intelligence.

Comparison between male and female sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence

20. There is significant difference exists between Male and female sport persons on self-actualization, integration, perception of reality, environmental mastery, overall mental health, inappropriate aggression and hostility, overall type-A personality, motivation, empathy, overall emotional intelligence and intelligence.

Comparison between open skill category and closed skill category sport persons on mental health, Type-A personality pattern, emotional intelligence and intelligence

21. There is significant difference exists between open skill and closed skill category sport persons on time urgency, inappropriate aggression and hostility, overall type-A personality pattern, self-awareness, and intelligence.

Comparison between Type-A and Type-B sport persons on mental health, , emotional intelligence and intelligence

22. There is significant difference exists between Type-A and type-B sport persons on self- regulation

Influence of sex, Type-A personality pattern and other sport related variables on mental health of sport persons

Three-way interactions

23. There is significant interaction of sex, Type-A personality pattern and levels of participation on self-actualization

24. There is significant interaction of sex, Type-A personality pattern and levels of experience on attitude towards self
25. There is significant interaction of sex, Type-A personality pattern and levels of family sport status on environmental mastery
26. There is significant interaction of sex, Type-A personality pattern and levels of perceived self-competence on environmental mastery

Two-way interactions

27. There is significant interaction of sex, and levels of participation on self-actualization
28. There is significant interaction of sex, and levels of experience on self-actualization
29. There is significant interaction of Type-A personality pattern and levels of family sport status on integration
30. There is significant interaction of sex and levels of perceived self-competence on self-actualization

Main effects

31. There is significant main effect of sex on self-actualization, integration, perception of reality, environmental mastery, and over all mental health
32. There is significant main effect of skill category on perception of reality and environmental mastery
33. There is significant main effect of levels of participation on autonomy.
34. There is significant main effect of levels of family sport status on autonomy and overall mental health

35. There is significant main effect of levels of punctuality on self-actualization, autonomy, environmental mastery and overall mental health

5.7 Conclusions

Relationships of the variables

The correlations between the total mental health score and the aspects of Type-A personality give a clear idea about the interrelatedness between the variables. Negative correlation is found between mental health and ‘time urgency’, ‘inappropriate aggression’, ‘goal directedness without proper planning’ and the total score of Type-A personality. This negative correlation is an indicator that higher the score on Type-A personality lower the mental health of sport persons.

Out of 42 inter correlations possible among the variables mental health and emotional intelligence along with its subcomponents, 41 of them found to have significant positive correlations. From the results, it can be asserted with much confidence that higher the emotional intelligence higher the mental health of sport person. As far as the emotional management and growth is inherent in the concept of positive mental health, it is not surprising to note that mental health is highly correlated with emotional intelligence.

There is a positive trend between IQ scores and components of mental health. And it indicates that mental health and intelligence are not opposing forces. ‘Integration’ in cognitive aspects which is reflected in one aspect of mental health, ‘integration’ shows the role of intelligence in mental health.

A number of studies have showed robust relationships between specific patterns of emotions and particular traits or broad dimensions of personality on the one hand and personality disorders on the other. In the present study, the

possibility that higher the scores on Type-A personality pattern lower the emotional intelligence of sport person is suggestive by the negative correlation between Type-A personality pattern and emotional intelligence.

Intelligence and Type-A personality pattern is negatively correlated. It is also found that among the components of Type-A personality pattern only 'goal directedness without proper planning' has significant negative correlation with intelligence, though all other components show a negative trend.

It can be asserted that emotional intelligence is slightly correlated with intelligence, which is too small to make clear predictions for these are largely independent entities. Exactly the same idea has been put forward by the proponent of emotional intelligence, Goleman. The status of relationship between emotional intelligence and intelligence in the realm of sport is not much different from that of general population.

Relationships of the variables on type-A sport persons

All the components of mental health are positively related to all of the domains of emotional intelligence. Higher the emotional intelligence of Type-A sport persons, higher the mental health. The mental health and intelligence of Type-A sport persons is positive related. Emotional intelligence and intelligence of Type-A sport person is not related.

Relationships of the variables on type-B sport persons

It can be asserted that emotionally intelligent Type-B sport persons are mentally healthy. Mental health of Type B sport persons is not related with their intelligence. There is no relationship between emotional intelligence and intelligence of Type-B sport persons. An overview of the relationship between mental health and emotional intelligence of Type B sport persons in comparison

with their Type-B counter parts, in the present investigation, shows a slight distinction in the way they correlate.

Predicting mental health of sport persons

The variables that could predict mental health of sport persons are social skills, self awareness, motivation and goal directedness without proper planning. The variables social skills, self-awareness and motivation are components of emotional intelligence that are positively related to mental health while goal directedness without proper planning, one aspect of Type-A personality pattern is negatively related to mental health.

Influence of sport related variables on mental health, Type-A personality pattern, emotional intelligence and intelligence of sport persons.

Among the groups based on six sport related variables, significant differences exist among the groups based on different levels of participation, experience, family sport status, punctuality, perceived self competence on either of the variables, mental health, type-A personality pattern, emotional intelligence and intelligence or its sub components. But the groups based on levels of self-practice are found have differences on neither of the variables, mental health, type-A personality pattern, emotional intelligence and intelligence nor its sub components.

Comparison of groups based on sex

The male sport persons are mentally healthier, emotionally intelligent, and intelligent than their female counter parts. But it is also noted that female sport persons are higher on the scores of type-A personality pattern.

Comparison of groups based on nature of sport

According to the nature of sport, sport persons were divided into two, such as open skill category and closed skill category. The present study gives evidence to conclude that the open skill category sport persons are more intelligent than closed skill category sport persons. Whereas the closed skill category sport persons scored higher on Type-A personality pattern. There is no significant difference between open and closed skill category sport persons on mental health and emotional intelligence.

Comparison of groups based on Type-A personality pattern

Type-A sport persons are lower on self-regulation compared to Type-B sport persons.

Influence of sex, Type-A personality pattern and other sport related variables on mental health of sport persons

A group of sport related variables such as levels of participation, levels of experience, levels of family sport status and levels of perceived self competence, in combination with the variables sex and type-A personality pattern, each of them is found to have interactive effect on mental health or its components.

Another group of variables such as skill category, levels of punctuality and levels of self-practice, in combination with the variables sex and type-A personality pattern, each of them is found to have no interactive effect on mental health or its components.

A third group of variables such as levels of experience, levels of family sport status and levels of perceived self competence, in combination with the variables sex, each of them is found to have interactive effect on mental health or its components.

5.8 Suggestions

The most important objectives of the discipline, sport psychology, is to enhance sport performance and to promote mental health of sport performance. The present investigation aimed at the understanding of mental health of sport persons and its nuances. As the results of the study suggest, it seems to give some relevant suggestions to some specific groups of individuals whose primary aim is related to the promotion of sport.

1. *Suggestions to sport administrators*

As the sport person shows some characteristics of Type-A behavior pattern, he/she tends to be less mentally healthy. One of such characteristic, goal directedness without proper planning, is related to the management and administration of sport person as a group, for e.g., improper time, material and human resource management during training and competition, incongruent reward system, over expectations and unrealistic demands, all these factors along with the over emphasis on competition may give rise to undue pressure on sport persons. And all these conditions might reduce sport persons' mental health. It may be suggested that all the above said situations should be considered during, policymaking, and implementation.

2. *Suggestions to coaches and sport persons*

- As the mental health of sport person is highly related to emotional intelligence, there is a window of opportunity i.e. emotional intelligence can be enhanced so as to promote mental health. All the dimensions of emotional intelligence can be nurtured by proper measures.
- Proper goal setting is inevitable in sport to motivate the sport persons, emphasis may be given to separate process, performance and out come goals for maintaining and boosting intrinsic motivation.

- Empathy should be developed for the essential smoothening of relations with coaches, teammates and other relevant individuals concerned.
- Social skills should be trained along with other sport skills.
- Awareness of one's own emotional world can bring about self-regulation through handling negative emotions.
- Psychological skills training should be started along with the sport skills training.
- And the proper age for marshalling psychological skills seems to be formative years.
- Whenever necessary professional psychological help should be sought out.

3. *Suggestions for further research*

The present study was an attempt to explore the psychological aspects of sport persons with a special emphasis on mental health. So that care was taken to include as many variables as possible those which the investigator found relevant and practical to conduct an in-depth analysis. This intention has forced the investigator to limit the scope of the study into sport persons from all the five recognized sport training centers run by Sports Authority of India (SAI).

- Further research on these variables may be conducted on large samples including sport persons from various training centers, colleges, schools and other concerned institutions.
- Comparative studies participating non-sport persons may be performed.

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<<<http://www.intelligence.com>>>

Appendices

BACKGROUND INFORMATION SCHEDULE (BIS)

1. പേര് :

2. വയസ്സ് :

3. ആൺ/പെൺ :

4. സ്പോർട്സ് ഇനം :

5. സ്ഥാപനം :

6. സ്ഥലം :

7. ഏത് തലത്തിൽവരെ മത്സരിച്ചിട്ടുണ്ട്?

സ്റ്റേറ്റ് ☐

നാഷണൽ ☐

ഇന്റർനാഷണൽ ☐

8. എത്ര നാളായി സ്പോർട്സിൽ പങ്കെടുക്കുന്നു?

.....

9. നിങ്ങളുടെ കുടുംബത്തിൽ സ്പോർട്സിൽ ഏർപ്പെടുന്നവരുണ്ടോ?

ഉണ്ട് ☐

ഇല്ല ☐

ഉണ്ടെങ്കിൽ അപ്രകാരമുള്ള ബന്ധം

SELF-RATING SCALES

Rajitha Menon, A. & Jayan, C.

Department of Psychology
University of Calicut
2004

പേര് വയസ്സ് ആൺ/പെൺ

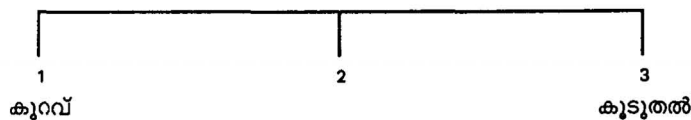
സ്പോർട്സ് ഇനം സ്ഥാപനം

മുന്ന് സൂചികകൾ താഴെ കൊടുത്തിരിക്കുന്നു. ഓരോന്നിലും 1, 2, 3 എന്നിങ്ങനെ മുന്ന് സ്ഥാനങ്ങൾ കൊടുത്തിരിക്കുന്നു. '1' ഏറ്റവും കുറഞ്ഞ മൂല്യത്തെയും '3' ഏറ്റവും കൂടിയ മൂല്യത്തെയും സൂചിപ്പിക്കുന്നു.

കായികജീവിതത്തിലെ മുന്ന് പ്രധാന മേഖലകളിൽ - സമയനിഷ്ഠ (Punctuality), സ്വപരിശീലനം (Self-practice), കാര്യക്ഷമത (Perceived self-competence) - താങ്കളുടെ സ്ഥാനം എവിടെയെന്ന് രേഖപ്പെടുത്തുകയാണ് വേണ്ടത്. പ്രത്യേകം നൽകിയിട്ടുള്ള സൂചികകളിൽ അനുയോജ്യമായ നമ്പറിനുചുറ്റും ഒരു വൃത്തം വരച്ച് ഉത്തരം രേഖപ്പെടുത്തുക.

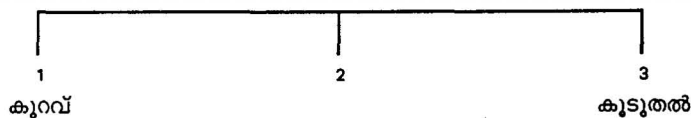
1. സമയനിഷ്ഠ (Punctuality)

സ്പോർട്സ് ജീവിതത്തിൽ താങ്കൾ എത്രമാത്രം സമയനിഷ്ഠ ഉള്ള ആളാണ്?



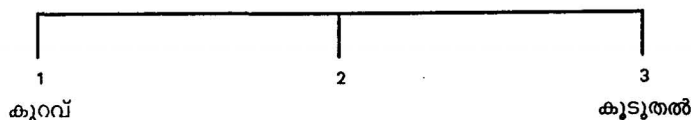
2. സ്വപരിശീലനം (Self-practice)

സ്വന്തം താല്പര്യത്തിൽ (പരിശീലകൻ, മാതാപിതാക്കൾ, സുഹൃത്തുക്കൾ തുടങ്ങിയവരുടെ നിർബന്ധത്തില്ലാതെ) എത്രമാത്രം കായികപരിശീലനത്തിൽ ഏർപ്പെടാറുണ്ട്.



3. കാര്യക്ഷമത (Perceived self-competence)

സ്വന്തം കായികജീവിതത്തെ വിലയിരുത്തുമ്പോൾ താങ്കൾ എത്രമാത്രം കഴിവുള്ള കായികതാരമാണ്?



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1988

Instructions:

Some statements related to certain problems that we face in our daily life are given below. Please indicate how far you agree or disagree with each statement. In the response sheet, against the item number of each statement, five choices, A, B, C, D and E are given. A denotes Strongly Agree, B denotes Agree, C denotes Undecided, D denotes Disagree, and E denotes Strongly Disagree.

Read each statement carefully and indicate your response in the response sheet with a ✓ mark. Try to answer all items. Your responses will kept confidential and will be used for research purpose only.

നിർദ്ദേശങ്ങൾ:

നിത്യജീവിതത്തിൽ നാം അഭിമുഖീകരിക്കുന്ന ചില പ്രശ്നങ്ങളെക്കുറിച്ചുള്ള ഏതാനും പ്രസ്താവനകളാണ് ചുവടെ ചേർത്തിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയോടും നിങ്ങൾ ഏതുമാത്രം യോജിക്കുന്നു, അല്ലെങ്കിൽ വിരോധിക്കുന്നു എന്ന് രേഖപ്പെടുത്തുക. ഉത്തരക്കടലാസിൽ ഓരോ പ്രസ്താവനയുടെയും നമ്പരിനു നേരെ A, B, C, D, E എന്നിങ്ങനെ അഞ്ച് ഉത്തരങ്ങൾ നൽകിയിട്ടുണ്ട്. A 'ശക്തിയായി യോജിക്കുന്നു' എന്നതിനെയും, B 'യോജിക്കുന്നു' എന്നതിനെയും, C 'പ്രത്യേക അഭിപ്രായം ഇല്ല' എന്നതിനെയും, D 'വിരോധിക്കുന്നു' എന്നതിനെയും, E 'ശക്തിയായി വിരോധിക്കുന്നു' എന്നതിനെയും സൂചിപ്പിക്കുന്നു.

ഓരോ പ്രസ്താവനയും ശ്രദ്ധിച്ചു വായിച്ചതിനുശേഷം നിങ്ങളുടെ ഉത്തരം ✓ അടയാളരൂപം ഉപയോഗിച്ച് ഉത്തരക്കടലാസിൽ രേഖപ്പെടുത്തുക. എല്ലാ പ്രസ്താവനകൾക്കും ഉത്തരം നൽകാൻ ശ്രമിക്കുക. നിങ്ങളുടെ ഉത്തരങ്ങൾ രഹസ്യമായി സൂക്ഷിക്കുന്നതും, ഗവേഷണ സംബന്ധമായ കാര്യങ്ങൾക്കുവേണ്ടി മാത്രം ഉപയോഗിക്കുന്നതുമാണ്.

Section 1

- 1 I consider criticism as a chance for progress.
ഉയർച്ചക്കുള്ള മെമ്പസരമായി ഞാൻ വിചർശനത്തെ കണക്കാക്കുന്നു.
- 2 I like to do things in the proper way.
ശരിയായി കാര്യങ്ങൾ ചെയ്യുവാൻ ഞാൻ ഇഷ്ടപ്പെടുന്നു.
- 3 I insist that others must accept my opinion.
മറുപുറം എന്റെ അഭിപ്രായത്തെ അംഗീകരിക്കണമെന്ന നിർബന്ധം എനിക്കുണ്ട്.
- 4 I do not like my weakness being pointed out.
എന്റെ ദുർബലതയെ ചൂണ്ടിക്കാണിക്കുന്നത് എനിക്കിഷ്ടമല്ല.
- 5 I do not think of my role in any matter.
ഏതു കാര്യത്തിലായാലും സ്വന്തം പങ്ക് എന്തെന്നെന്ന് ഞാൻ ആലോചിക്കാറില്ല.
- 6 I will readily accept if someone says that I am not broad-minded
എനിക്ക് വിശാല ഹൃദയമില്ലെന്നു പറഞ്ഞാൽ അത് അംഗീകരിക്കുവാൻ ഞാൻ തയ്യാറാണ്.
- 7 I do not consider that I am responsible for my mistakes.
എന്റെ തെറ്റുകളുടെ ഉത്തരവാദിത്വം എനിക്കുതന്നെയാണെന്ന് ഞാൻ കരുതുന്നില്ല.

- 8 I often feel that I am not self-sufficient in certain matters.
ചില കാര്യങ്ങളിൽ എനിക്ക് സ്വയം പര്യാപ്തതയില്ലെന്ന് പലപ്പോഴും തോന്നാറുണ്ട്.
- 9 I cannot make friends with others, by understanding their limitations.
പരിമിതികൾ മനസ്സിലാക്കി നല്ല സുഹൃത്ത്ബന്ധം സ്ഥാപിക്കാൻ എനിക്ക് കഴിയില്ല.
- 10 When I think of my future, I do not consider my abilities.
ഭാവിയെക്കുറിച്ച് ചിന്തിക്കുമ്പോൾ സ്വന്തം കഴിവുകൾ കണക്കിലെടുക്കാറില്ല.
- 11 While evaluating an action, its negative side should be considered.
ഒരു പ്രവൃത്തിയെ വിലയിരുത്തുമ്പോൾ, അതിന്റെ ദോഷങ്ങൾക്ക് പ്രാധാന്യം നൽകണം.
- 12 I have a high esteem about myself.
എനിക്ക് ഏതെങ്കിലും നല്ല മതിപ്പാണ്.

Section 2

- 1 I am prepared to dedicate my life for a noble cause.
ഒരു മഹത്തായ കാര്യത്തിനുവേണ്ടി ജീവിതം ഉഴഞ്ഞുവയ്ക്കുവാൻ ഞാൻ തയ്യാറാണ്.
- 2 There is no need for showing respect towards human beings.
മനുഷ്യ സമുദായത്തോട് ആദരവ് കാണിക്കേണ്ട ആവശ്യമില്ല.
- 3 At times of happiness, my mind involves in other things.
ഉല്ലാസവേളയിൽ എന്റെ മനസ്സ് മറ്റു ചിന്തകൾ വഹിക്കാറുണ്ട്.
- 4 When I help others, I derive a lot of mental satisfaction.
മറ്റുള്ളവർക്ക് സഹായം ചെയ്യുമ്പോഴുള്ള ആത്മ സംതൃപ്തി അനുഭവമാണ്.
- 5 Obstacles do not stand on my way, while I try for achieving my goals.
ലക്ഷ്യത്തിലെത്തുന്നതിലുള്ള തടസങ്ങൾ എന്റെ പ്രവൃത്തിയെ ബാധിക്കാറില്ല.
- 6 It is not good to have foresight about the future.
ഭാവിയെക്കുറിച്ച് ദീർഘവീക്ഷണം ഉണ്ടായിരിക്കുന്നത് നന്നല്ല.
- 7 It is better not to express one's own abilities.
സ്വന്തം കഴിവ് പ്രകടിപ്പിക്കാതിരിക്കുന്നതാണ് ഉചിതം.
- 8 I behave in such a way to attract friends.
സുഹൃത്തുക്കളെ ആകർഷിക്കത്തക്ക വിധത്തിൽ അവരോട് ഞാൻ പെരുമാറുന്നു.
- 9 I do not take any responsibility which does not affect me.
എന്നെ ബാധിക്കാത്ത ഒരു പ്രശ്നവും ഞാൻ ഏറ്റെടുക്കാറില്ല.
- 10 I can behave in such a manner as to evoke pity in others.
മറ്റുള്ളവരിൽ അനുകമ്പ ഉളവാക്കുന്ന രീതിയിൽ എനിക്ക് പെരുമാറാൻ കഴിയും.
- 11 I do not express my sympathy towards the suffering innocent.
മർദ്ദനമേൽക്കേണ്ടി വരുന്ന നിരപരാധിയോട് ഞാൻ സഹതാപം പ്രകടിപ്പിക്കാറില്ല.
- 12 The views of others must be considered.
മറ്റുള്ളവരുടെ ആശയങ്ങൾ കണക്കിലെടുക്കേണ്ടതാണ്.

Section 3

- 1 When I evaluate myself, I consider my merits as well as demerits.
ഞാൻ സ്വയം വിലയിരുത്തുമ്പോൾ, നേട്ടങ്ങളോടൊപ്പം കോട്ടങ്ങളും കണക്കിലെടുക്കാറുണ്ട്.
- 2 I think that life has a meaning.
ജീവിതത്തിന് ഒരു അർത്ഥം ഉണ്ടെന്ന് എനിക്ക് തോന്നുന്നു.
- 3 High aspirations should be the core of life.
ഉയർന്ന പ്രതീക്ഷകളായിരിക്കണം ജീവിതത്തിന്റെ കാതൽ.
- 4 When I am unable to solve a problem, I feel frustrated.
ഒരു പ്രശ്നം പരിഹരിക്കാൻ കഴിയാതെ വരുമ്പോൾ, സ്വയം തകരുന്നതായി തോന്നാറുണ്ട്.
- 5 After a failure, I can find new methods.
പരാജയത്തിനുശേഷം പുതിയ വഴികൾ കണ്ടെത്തുവാൻ എനിക്കു കഴിയും.

- 6 I do not have anxiety even in my difficulties.
ബദ്ധപ്പാടുള്ള അവസരങ്ങളിൽ പോലും എനിക്ക് ഉത്കണ്ഠ ഉണ്ടാകാറില്ല.
- 7 I have no goals in my life.
എന്റെ ജീവിതത്തിന് യാതൊരു ലക്ഷ്യവുമില്ല.
- 8 There nothing wrong in not keeping words.
വാക്കുപാലിക്കാതിരിക്കുന്നതിൽ തെറ്റില്ല.
- 9 I think that facts and moral values do not coincide.
വസ്തുതകളും, ധർമ്മിക മൂല്യങ്ങളും തമ്മിൽ പൊരുത്തപ്പെടില്ല എന്ന് ഞാൻ കരുതുന്നു.
- 10 I am conscious about the right of others.
മറ്റുള്ളവരുടെ അവകാശങ്ങളെക്കുറിച്ചുള്ള അവബോധം എനിക്കുണ്ട്.
- 11 I am not able to face a disappointing situation.
നിരാശാജനകമായ ഒരു സാഹചര്യത്തെ നേരിടാനുള്ള കഴിവ് എനിക്കില്ല.
- 12 I do not like the work which needs accuracy.
സൂക്ഷ്മത ആവശ്യമുള്ള ജോലികൾ ഞാൻ ഇഷ്ടപ്പെടുന്നില്ല.

Section 4

- 1 I can take appropriate decisions.
അനുയോജ്യമായ തീരുമാനങ്ങൾ എടുക്കുവാൻ എനിക്ക് കഴിയും.
- 2 What I think cannot to be implemented always.
ഞാൻ ഉദ്ദേശിക്കുന്ന കാര്യങ്ങൾ മിക്കവാറും നടപ്പാക്കാൻ കഴിയാറില്ല.
- 3 I do many things because of the pressure from others.
മറ്റുള്ളവരുടെ സമ്മർദ്ദങ്ങൾക്കു വഴങ്ങിയാണ് ഞാൻ പല കാര്യങ്ങളും ചെയ്യുന്നത്.
- 4 I can work with self-control.
സ്വയം നിയന്ത്രിച്ച് പ്രവർത്തിക്കുവാൻ എനിക്ക് കഴിയാറുണ്ട്.
- 5 I like others working on my behalf.
മറ്റുള്ളവർ എനിക്കുവേണ്ടി പ്രവർത്തിക്കുന്നത് ഞാൻ ഇഷ്ടപ്പെടുന്നു.
- 6 I do not always follow the traditions when found necessary.
ഉചിതമായ സന്ദർഭങ്ങളിൽ കീഴ്വഴക്കങ്ങളെ ഞാൻ മാനിക്കാറില്ല.
- 7 In choosing things, I depend on others.
ആവശ്യമുള്ളവ തെരഞ്ഞെടുക്കാൻ ഞാൻ മറ്റുള്ളവരെ ആശ്രയിക്കാറുണ്ട്.
- 8 My actions are always justifiable.
എന്റെ പ്രവൃത്തികൾക്ക് എല്ലായ്പ്പോഴും ന്യായീകരണം ഉണ്ടായിരിക്കും.
- 9 It is better not to think independently.
സ്വതന്ത്രമായി ചിന്തിക്കാതിരിക്കുന്നതാണ് ഉചിതം.
- 10 I have control on my actions.
എന്റെ പ്രവൃത്തികളെ നിയന്ത്രിക്കുവാൻ എനിക്ക് കഴിയും.
- 11 It is nice to have the ability to take care of one's own affairs.
സ്വന്തം കാര്യങ്ങൾ നോക്കുവാൻ പ്രാപ്തി ഉണ്ടാവുക എന്നത് നല്ലതാണ്.
- 12 I act according to my own will and pleasure.
എന്റെ ഇച്ഛാശക്തിക്കനുസരണമായി ഞാൻ പ്രവർത്തിക്കാറുണ്ട്.

Section 5

- 1 I can accept my mistakes.
എന്റെ തെറ്റുകളെ ഉൾക്കൊള്ളാൻ എനിക്ക് കഴിയും.
- 2 I do not fully grasp things that happen around me.
എന്റെ ചുറ്റുപാടു, നടക്കുന്ന കാര്യങ്ങൾ അന്വേഷി ഞാൻ ഗ്രഹിക്കാറില്ല.

- 3 I remind even my parents about their mistakes.
എന്റെ മാതാപിതാക്കളുടെ തെറ്റുകൾപോലും ഞാൻ അവരെ ബോധ്യപ്പെടുത്താറുണ്ട്.
- 4 On my own accord, I don't distort facts.
എന്റെ ഇഷ്ടപ്രകാരം ഞാൻ വസ്തുതകളെ വളച്ചൊടിപ്പിക്കാറില്ല.
- 5 I am not responsible for some of the failures which occur in my life.
എന്റെ ജീവിതത്തിൽ ചിലപ്പോൾ സംഭവിക്കാറുള്ള പരാജയങ്ങൾക്ക് കാരണം ഞാനല്ല.
- 6 I am conscious of my limitations.
എന്റെ പരിമിതികളെക്കുറിച്ച് എനിക്ക് ബോധ്യമുണ്ട്.
- 7 I do not care for things which are done by others, even if they are good.
മറുരുളവർ ചെയ്യുന്ന കാര്യങ്ങൾ അവ നല്ലതാണെങ്കിൽപോലും ഞാൻ ശ്രദ്ധിക്കാറില്ല.
- 8 We need not bother about the feelings of others.
മറുരുളവരുടെ വികാരങ്ങളെ നാം മാനിക്കേണ്ടതില്ല.
- 9 Without any reason others find fault with me.
അകാരണമായി മിക്ക ആളുകളും എന്നെ കുറ്റപ്പെടുത്തുന്നു.
- 10 I would like analyse things realistically.
വസ്തുനിഷ്ഠമായി കാര്യങ്ങൾ അവലോകനം ചെയ്യുവാൻ ഞാനിഷ്ടപ്പെടുന്നു.
- 11 It would be sensible to take care of oneself ignoring the surroundings.
ചുറ്റുപാടുകളെ റോക്കാരെ സ്വന്തം കാര്യങ്ങൾ നോക്കുന്നതാണ് വിവേകം.
- 12 It is better to know how others think about a problem.
ഒരു കാര്യത്തെക്കുറിച്ച് മറുരുളവർ എങ്ങനെ ചിന്തിക്കുന്നു എന്ന് അറിയേണ്ടതാണ്.

Section 6

- 1 One must carry out things according to situations.
സന്ദർഭത്തിന് അനുയോജ്യമായ രീതിയിൽ പ്രവർത്തിക്കേണ്ടതാണ്.
- 2 I take initiative to solve the problems of others.
മറുരുളവരുടെ പ്രശ്നങ്ങൾ പരിഹരിക്കുന്നതിന് ഞാൻ മുൻകൈ എടുക്കാറുണ്ട്.
- 3 I am confident that there will be achievements at any time in my life.
എന്റെ ജീവിതത്തിൽ എപ്പോഴെങ്കിലും നേട്ടം ഉണ്ടാകുമെന്ന് എനിക്കറിയാം.
- 4 My words often annoys others.
എന്റെ സംസാരം പലപ്പോഴും മറുരുളവരെ വേദനിപ്പിക്കാറുണ്ട്.
- 5 My relations with my friends is satisfactory.
എന്റെ സുഹൃദ്ബന്ധങ്ങൾ തൃപ്തികരമാണ്.
- 6 I do not like to move closely with others.
മറുരുളവരുമായി കൂടുതൽ അടുത്തു് പെരുമാറാൻ ഞാൻ ഇഷ്ടപ്പെടുന്നില്ല.
- 7 I can not make use of happy experience of my life.
സന്തോഷകരമായ അനുഭവങ്ങൾ ജീവിതത്തിൽ പ്രയോജനപ്പെടുത്താൻ എനിക്ക് കഴിയില്ല.
- 8 I never try to face difficult problems.
സങ്കീർണ്ണമായ പ്രശ്നങ്ങൾ നേരിടാൻ ഞാൻ ശ്രമിക്കാറില്ല.
- 9 Before doing a work, its merits should be considered.
ഒരു പ്രവൃത്തി ചെയ്യുന്നതിനു മുമ്പ് അതിന്റെ നേട്ടങ്ങളെക്കുറിച്ച് ആലോചിക്കേണ്ടതാണ്.
- 10 I find it difficult to cope with the new surroundings.
പുതിയ ചുറ്റുപാടുകളുമായി ഇണങ്ങിപ്പോരാൻ എനിക്ക് പ്രയാസമാണ്.
- 11 I become upset due-to repeated failures.
തുടർച്ചയായി പരാജയപ്പെടുമ്പോൾ ഞാൻ തകർന്നുപോകാറുണ്ട്.
- 12 I like to work for the welfare of others.
മറുരുളവരുടെ ശ്ലേഷ്മത്തിനുവേണ്ടി പ്രവർത്തിക്കാൻ എനിക്ക് താല്പര്യമുണ്ട്.

RESPONSE SHEET
(MENTAL HEALTH STATUS SCALE)

പേര്: വയസ്സ്: ആൺ/പെൺ:

സ്പോർട്സ് ഇനം: സ്ഥലം:

A. ശക്തിയായി യോജിക്കുന്നു. B. യോജിക്കുന്നു. C. അഭിപ്രായമില്ല. D. വിയോജിക്കുന്നു.
E. ശക്തിയായി വിയോജിക്കുന്നു.

ഉദാഹരണം:

1.	A	B	C	D	E
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SECTION A					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
Total					
SECTION B					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
Total					

SECTION C					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
Total					
SECTION D					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
Total					

SECTION E					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
Total					
SECTION F					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
Total					
Grand Total					

A SCALE OF TYPE-A PERSONALITY PATTERN

പേര് വയസ്സ് ആൺ/പെൺ

താഴെ കൊടുത്തിരിക്കുന്ന ഓരോ പ്രസ്താവനയും ശ്രദ്ധിച്ചു വായിച്ചശേഷം അവ ഓരോന്നും നിങ്ങളെ സംബന്ധിച്ച് ശരിയോ തെറ്റോ എന്ന് ശരി അടയാളം (✓) ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

	ശരി	തെറ്റ്
1. എന്റെ ജോലി മുന്നേറുന്നതിനുമുമ്പ് മറ്റുള്ളവരുടേതു തീരാനായി കാത്തുനിൽക്കുന്നത് എനിക്കിഷ്ടമല്ല.		
2. ക്യൂവിൽ കാത്തുനിൽക്കുന്നത് എനിക്കു വെറുപ്പാണ്.		
3. ഞാൻ എളുപ്പത്തിൽ പ്രകോപിതനാകുമെന്നാണ് ജനസംസാരം.		
4. അവസരമുള്ളപ്പോഴെല്ലാം പ്രവൃത്തികൾ ഞാൻ മത്സരമാക്കി മാറ്റാൻ ശ്രമിക്കും.		
5. ജോലിയുടെ യഥാർത്ഥരീതിയിൽ മനസ്സിലായിട്ടില്ലെങ്കിലും ചെയ്യേണ്ടവ എങ്ങനെയെങ്കിലും ചെയ്തുതീർക്കാൻ ഞാൻ ധൂതികാട്ടും.		
6. അവധിക്കു പോകുമ്പോഴും, കുറച്ചു ജോലികൾ ഞാൻ കൂടെ കൊണ്ടുപോകും.		
7. വേണ്ടത്ര ആസൂത്രണം ചെയ്യാതെ, തിരക്കുകൂട്ടുന്നതിനാലാണ്, എന്റെ ജോലിയിൽ സാധാരണ അബദ്ധങ്ങൾ സംഭവിക്കാറുള്ളത്.		
8. പണിചെയ്യാതിരിക്കുമ്പോൾ എനിക്ക് കുറ്റബോധം തോന്നും.		
9. മത്സരാവസരങ്ങളിൽ എനിക്ക് പെട്ടെന്ന് ദേഷ്യംവരാറുണ്ടെന്ന് എല്ലാവരും പറയുന്നു.		
10. ധാരാളം ജോലികളുടെ സമ്മർദ്ദമുള്ളപ്പോൾ എനിക്ക് പെട്ടെന്ന് ദേഷ്യംവരും.		
11. രണ്ടോ അതിലധികമോ ജോലികൾ ഒരേസമയം ചെയ്യാൻ, അവസരം കിട്ടുമ്പോഴെല്ലാം ഞാൻ ശ്രമിക്കും.		
12. ഞാൻ സമയത്തിനുമുമ്പേ പ്രവൃത്തികൾ ചെയ്തു തീർക്കുന്നയാളാണ്.		
13. വൈകുന്നതു കാത്തുനിൽക്കാൻ എനിക്കു ക്ഷമയില്ല.		
14. കാര്യമൊന്നുമില്ലെങ്കിലും എനിക്ക് ധൂതിയല്പം കൂടുതലാണ്.		

EMOTIONAL INTELLIGENCE SCALE FOR SPORT PERSONS

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(2003)

നിർദ്ദേശങ്ങൾ:

താങ്കളുടെ 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 അത്യുപരിവുമായ സന്ദർഭത്തിൽ മാത്രം അഭിപ്രായമില്ല എന്ന് രേഖപ്പെടുത്താവുന്നതാണ്.

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിരോധിക്കുന്നു	ശക്തിയായി വിരോധിക്കുന്നു
1. എന്റെ ദേഷ്യം എന്നിക്കൊരു പ്രശ്നമായി വന്നിട്ടില്ല.					
2. എന്റെ മനോവ്യാപാരങ്ങളെ ഞാൻ നിരീക്ഷിക്കാറുണ്ട്.					
3. മറ്റുള്ളവർക്ക് എളുപ്പത്തിൽ എന്നെ നിരുത്സാഹപ്പെടുത്തുവാൻ കഴിയാറുണ്ട്.					
4. ചില സന്ദർഭങ്ങളിൽ മറ്റുള്ളവരുടെ ബുദ്ധിമുട്ടുകൾ ആലോചിച്ചാൽ സ്വന്തം വിഷമം താനേമാറും.					
5. പ്രകോപിതനാകുന്ന അവസരങ്ങളിൽ എന്നെ ഭരിക്കുന്ന വികാരം കോപമാണെന്ന് ഞാൻ തിരിച്ചറിയാറുണ്ട്.					
6. എന്റെ തീരുമാനങ്ങൾക്ക് പിന്നിലെ ചേതോവികാരങ്ങളെപ്പറ്റി ഞാൻ ബോധവാനാണ്.					
7. എന്റെ ചിന്തകൾ എന്റെ വികാരങ്ങളെ മാറ്റിമറിക്കുന്നത് ഞാൻ ശ്രദ്ധിക്കാറുണ്ട്.					
8. മറ്റുള്ളവർ എന്നെ കാര്യങ്ങൾ വിശ്വാസത്തോടെ ഏല്പിക്കാറുണ്ട്.					
9. മോശമായ മാനസികാവസ്ഥയുടെ കാരണങ്ങൾ കണ്ടെത്തുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
10. മനസ്സിന് വിഷമം ഉണ്ടാക്കുന്ന കാര്യങ്ങളെ അവലോകനം ചെയ്യാൻ ഞാൻ ശ്രമിക്കാറില്ല.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിയോജിക്കുന്നു	ശക്തിയായി വിയോജിക്കുന്നു
11. ഒരു ലക്ഷ്യം വച്ച് തുടങ്ങിയാൽ അത് നേടുന്നതുവരെ കഠിനമായി പ്രവർത്തിക്കുവാൻ ഞാൻ തയ്യാറാണ്.					
12. ഞാനെടുത്തിട്ടുള്ള യുക്തിപരമായ തീരുമാനങ്ങൾ നടപ്പിലാക്കാൻ എനിക്ക് കഴിയാറില്ല.					
13. വേണമെന്നുവെച്ചാൽ ആരോട് തോന്നുന്ന വെറുപ്പോ അസുയരയോ ഇല്ലാതാക്കാം.					
14. പിടിവാശി എന്ന പലപ്പോഴും അപകടത്തിൽ ചാടിയിട്ടുണ്ട്.					
15. മുൻകൂട്ടി തീരുമാനിച്ച പല കാര്യങ്ങളും എന്റെ മടിമൂലം നടക്കാതെ പോയിട്ടുണ്ട്.					
16. തെറ്റുകളിൽനിന്ന് പാഠം ഉൾക്കൊള്ളുവാൻ പലപ്പോഴും എനിക്ക് കഴിയാറില്ല.					
17. പ്രതികൂല സാഹചര്യങ്ങളിൽ പെട്ടെന്ന് പ്രതീക്ഷ കൈവിടുന്ന ഒരാളാണ് ഞാൻ.					
18. ബന്ധങ്ങൾ ഊഷ്മളമാക്കാൻ എനിക്ക് പ്രത്യേകം കഴിവുണ്ട്.					
19. വിഷമഘട്ടങ്ങളിൽ എന്ത് ചെയ്യണമെന്നറിയാതെ ഞാൻ കൂഴങ്ങാറുണ്ട്.					
20. വളരെ പ്രധാനപ്പെട്ട പ്രവർത്തികൾക്കിടയിലും നിസ്സാര കാര്യങ്ങൾ പോലും എന്റെ ശ്രദ്ധതെറ്റിക്കാറുണ്ട്.					
21. കഴിയുന്നിടത്തോളം മനസ്സ് ശാന്തമായി കൊണ്ടുനടക്കാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					
22. മറ്റുള്ളവരുടെ പെരുമാറ്റങ്ങളിൽനിന്ന് വളരെ പെട്ടെന്ന് അവരെ മനസ്സിലാക്കാൻ എനിക്ക് കഴിയും.					
23. മറ്റുള്ളവരെ പരമാവധി വേദനിപ്പിക്കാതിരിക്കാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					
24. മറ്റുള്ളവരെ ആശ്വസിപ്പിക്കുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
25. എന്റെ അവകാശങ്ങളോടൊപ്പംതന്നെ മറ്റുള്ളവരുടെ അവകാശങ്ങളും കണക്കിലെടുക്കാറുണ്ട്.					
26. എത്രതന്നെ മുൻകരുതലുകൾ എടുത്താലും കാര്യത്തോടടുക്കുമ്പോൾ എന്റെ മനസ്സിന്റെ നിയന്ത്രണം നഷ്ടപ്പെടാറുണ്ട്.					
27. എന്റെ വികാരങ്ങൾ ശരിയാവെണ്ണം പ്രകടിപ്പിക്കാൻ എനിക്ക് കഴിയാറില്ല.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അല്പമായവിധം	വിയോജിക്കുന്നു	ശക്തിയായി വിയോജിക്കുന്നു
28. മറ്റുള്ളവരുമായി സംസാരിക്കുമ്പോൾ എവിടെ തുടങ്ങണം എങ്ങനെ അവസാനിപ്പിക്കണം എന്നൊന്നുമറിയാതെ ഞാൻ കൂഴങ്ങാറുണ്ട്.					
29. എന്റെ ഇടപെടൽമൂലം പലരുടെ പ്രശ്നങ്ങളും പരിഹരിക്കുവാൻ കഴിഞ്ഞിട്ടുണ്ട്.					
30. മറ്റുള്ളവരോട് കാര്യങ്ങൾ പറഞ്ഞ് ബോധ്യപ്പെടുത്തുവാൻ എനിക്ക് കഴിവുണ്ട്.					

പേര് വയസ്സ് ആൺ/പെൺ

സ്പോർട്സ് വിഭാഗം സ്ഥാപനം സ്ഥലം

- നന്ദി -

ADVANCED PROGRESSIVE MATRICES
Sets 1 and 2

Name :

Place :

Age :

Sex :

SET 1		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

SET 2								
1			13			25		
2			14			26		
3			15			27		
4			16			28		
5			17			29		
6			18			30		
7			19			31		
8			20			32		
9			21			33		
10			22			34		
11			23			35		
12			24			36		

TOTAL SET 2

EMOTIONAL INTELLIGENCE SCALE FOR SPORT PERSONS (DRAFT SCALE)

Rajitha Menon, A. & Jayan, C.

Department of Psychology
University of Calicut

പേര് വയസ്സ് ആൺ/പെൺ

സ്പോർട്സ് വിഭാഗം സ്ഥാപനം സ്ഥലം

നിർദ്ദേശങ്ങൾ:

താങ്കളുടെ 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
S.A.					
1. ഞാൻ യാതൊരു കാരണവുമില്ലാതെ വിഷമിക്കാറുണ്ട്.					
2. പ്രകോപിതനാകുന്ന അവസരങ്ങളിൽ എന്നെ ഭരിക്കുന്ന വികാരം കോപമാണെന്ന് ഞാൻ തിരിച്ചറിയാറുണ്ട്.					
3. എനിക്ക് താല്പര്യമുള്ള വിഷയങ്ങൾ ഏതൊക്കെയാണ് എന്ന് എനിക്ക് പൂർണ്ണബോധ്യമുണ്ട്.					
4. പല കാര്യങ്ങളും ചെയ്തുകഴിഞ്ഞതിനുശേഷം വേണ്ടിയിരുന്നില്ല എന്ന് തോന്നാറുണ്ട്.					
5. ഏതൊരു മാനസിക സംഘർഷത്തിനുശേഷവും ശരിതെറ്റുകളെ വിലയിരുത്തുവാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					
6. പല ഗുരുതരമായ പ്രശ്നങ്ങളും അവലോകനം ചെയ്യാതെ മാറ്റിവയ്ക്കാറുണ്ട്.					
7. മനസ്സിന് വിഷമം ഉണ്ടാക്കുന്ന കാര്യങ്ങളെ അവലോകനം ചെയ്യാൻ ഞാൻ ശ്രമിക്കാറില്ല.					
8. സ്വന്തം മാനസികവികാരങ്ങളെ മറ്റൊരു വ്യക്തിയുടേതെന്ന പോലെ മാറിനിന്ന് കാണുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
9. മനസ്സിന്റെ അടിത്തട്ടിലുള്ള പല ഇഷ്ടാനിഷ്ടങ്ങളും എന്റെ നിത്യജീവിതത്തെ സാരമായി ബാധിക്കാറുണ്ട്.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിയോജിക്കുന്നു	ശക്തിയായി വിയോജിക്കുന്നു
10. വരുന്നത് വരുന്നതുപോലെ തന്നെ വരട്ടെ എന്ന് ആശ്വസിക്കുന്നു ഒരാളാണ് ഞാൻ.					
11. മാനസികസംഘർഷങ്ങൾ ശാരീരികപ്രവർത്തനങ്ങളെ ബാധിക്കുന്നത് എനിക്ക് പെട്ടെന്ന് തിരിച്ചറിയാൻ കഴിയും.					
12. എന്റെ തീരുമാനങ്ങൾക്ക് പിന്നിലെ ചേതോവികാരങ്ങളെപ്പറ്റി ഞാൻ ബോധപ്രാപ്തനാണ്.					
13. ജാഗ്രതയോടെ സ്വയം വീക്ഷിക്കാൻ എനിക്ക് സാധിക്കുന്നു.					
14. ദേഷ്യം, സങ്കടം മുതലായ വികാരങ്ങൾ മനസ്സിലുണരുമ്പോൾ എന്തെല്ലാം ചെയ്തുകൂട്ടാറുണ്ട് എന്ന് എനിക്ക് ബോധ്യമില്ല.					
15. ഞാൻ ചെയ്ത ചില വിഡ്ഢിത്തങ്ങൾ ഓർക്കുമ്പോൾ സ്വയംമറന്ന് ചിരിക്കാറുണ്ട്.					
16. സ്വന്തം കഴിവുകളേയും കഴിവുകേടുകളേയും പറ്റി എനിക്ക് വ്യക്തമായ ധാരണയില്ല.					
17. എന്റെ മനോവ്യാപാരങ്ങളെ ഞാൻ നിരീക്ഷിക്കാറുണ്ട്.					
18. ജീവിതത്തിലെ സംഘർഷഘട്ടങ്ങളിൽ ഞാൻ എങ്ങനെ പെരുമാറുന്നു എന്ന് എനിക്ക് വ്യക്തതയുണ്ട്.					
19. എത്രയോ വ്യത്യസ്തങ്ങളായ വൈകാരികഅനുഭവങ്ങൾ എനിക്കുണ്ടാകാറുണ്ട്.					
20. എന്റെ ചിന്തകൾ എന്റെ വികാരങ്ങളെ മാറ്റിമറിക്കുന്നത് ഞാൻ ശ്രദ്ധിക്കാറുണ്ട്.					
21. എന്റെ മാനസികാവസ്ഥയിൽ വരുന്ന മാറ്റങ്ങൾ വളരെ പെട്ടെന്ന് മനസ്സിലാക്കാൻ എനിക്ക് കഴിയും.					
22. മോശമായ മാനസികാവസ്ഥയുടെ കാരണങ്ങൾ കണ്ടെത്തുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
S.R.					
1. എനിക്ക് ഒരാളോട് വെറുപ്പ് തോന്നിയാൽ അത് മാറിക്കിട്ടുവാൻ ബുദ്ധിമുട്ടാണ്.					
2. വളരെ മോശം അവസ്ഥയിലും വളരെ പെട്ടെന്ന് എന്റെ മനസ്സിന്റെ നിയന്ത്രണം എനിക്ക് കിട്ടാറുണ്ട്.					
3. ജീവിതത്തിലെ നഷ്ടങ്ങളോർത്ത് ഞാൻ വളരെയധികം വിഷമിക്കാറുണ്ട്.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിയോജിക്കുന്നു	ശക്തിയായി വിയോജിക്കുന്നു
4. എന്റെ ദേഷ്യം എനിക്കൊരു പ്രശ്നമായി വന്നിട്ടില്ല.					
5. എത്രശ്രമിച്ചാലും വിഷമം ഒഴിവാക്കുവാൻ എനിക്ക് കഴിയാറില്ല.					
6. മാനസികാവസ്ഥകളിൽ ഉയർച്ചതാഴ്ചകൾ സ്വാഭാവികം, എങ്കിലും ഇവതമ്മിൽ സംതുലനം ഞാൻ കാത്തു സൂക്ഷിക്കുന്നു.					
7. ഞാനെടുത്തിട്ടുള്ള യുക്തിപരമായ തീരുമാനങ്ങൾ നടപ്പിലാക്കാൻ എനിക്ക് കഴിയാറില്ല.					
8. പെട്ടെന്ന് ശുശ്രൂഷിക്കുന്ന സ്വഭാവം എനിക്കുണ്ട്.					
9. വിഷമഘട്ടങ്ങളിൽ എന്ത് ചെയ്യണമെന്നറിയാതെ ഞാൻ കൂഴങ്ങാറുണ്ട്.					
10. എത്രതന്നെ മുൻകരുതലുകൾ എടുത്താലും കാര്യത്തോടടുക്കുമ്പോൾ എന്റെ മനസ്സിന്റെ നിയന്ത്രണം നഷ്ടപ്പെടാറുണ്ട്.					
11. തീരെ താല്പര്യമില്ലെങ്കിലും സുപ്രധാനമായ പല കാര്യങ്ങളും ഞാൻ മനഃപൂർവ്വം താല്പര്യമുണ്ടാക്കി ചെയ്തു തീർക്കാറുണ്ട്.					
12. എന്തെങ്കിലും ചെറിയ ഒരു കാരണം കിട്ടിയാൽ അതിനെക്കുറിച്ചുതന്നെ ഓർത്ത് ഞാൻ വ്യസനിക്കാറുണ്ട്.					
13. മനസ്സിന് അസ്വസ്ഥതയുണ്ടാക്കുന്ന പല ചിന്തകളെയും ശ്രമകരമായി കൈകാര്യംചെയ്ത് മനഃശാന്തി വരുത്തുവാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					
14. മനോനിയന്ത്രണം കൈവിട്ടുപോകുമോ എന്ന് ഭയപ്പെട്ട അനുഭവങ്ങൾ എന്റെ ജീവിതത്തിൽ സർവ്വസാധാരണമാണ്.					
15. വേണമെന്നുവെച്ചാൽ ആരോട് തോന്നുന്ന വെറുപ്പോ അസൂയയോ ഇല്ലാതാക്കാം.					
16. ഞാൻ കൃത്രിമ മനഃശാന്തി മാർഗ്ഗങ്ങൾ (പുകവലി, മദ്യം, പാൻ മസാല, ഉറക്കഗുളികകൾ) തുടങ്ങിയവ ഉപയോഗിക്കാറുണ്ട്.					
17. ചില സാമൂഹ്യസന്ദർഭങ്ങളിൽ ആവശ്യമെന്ന് തോന്നുപക്ഷം നീരസം, ദേഷ്യം മുതലായവ ഞാൻ അഭിനയിക്കാറുണ്ട്.					
18. കഴിയുന്നിടത്തോളം മനസ്സ് ശാന്തമായി കൊണ്ടുനടക്കാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിയോജിക്കുന്നു	ശക്തിയായി വിയോജിക്കുന്നു
19. എടുത്തുപാടി തീരുമാനങ്ങൾ എടുത്തതിന്റെ പല ദോഷങ്ങളും എനിക്ക് മിക്കവാറും അനുഭവിക്കേണ്ടി വന്നിട്ടുണ്ട്.					
20. മനോനിയന്ത്രണം ബോധപൂർവ്വം ഞാൻ പരിശീലിക്കാറുണ്ട്.					
21. യാതൊരുവിധ മുൻവിധികളുമില്ലാതെ കാര്യങ്ങളെ സമീപിക്കാൻ എനിക്ക് കഴിയാറുണ്ട്.					
22. മനസ്സിന്റെ ഭാവമാറ്റങ്ങൾക്കനുസരിച്ച് ഞാനെടുത്ത തീരുമാനങ്ങളും അടിക്കടി മാറ്റാറുണ്ട്.					
M.T.					
1. ഞാനെടുത്തിട്ടുള്ള ഒട്ടുമിക്ക കാര്യങ്ങളും പകുതിവഴിക്കുവച്ച് മുടങ്ങാറുണ്ട്.					
2. ശുഭാപ്തിവിശ്വാസം ജീവിതത്തിൽ പല നിർണ്ണായക ഘട്ടങ്ങളിലും എന്നെ രക്ഷിച്ചിട്ടുണ്ട്.					
3. മറ്റുള്ളവർക്ക് എളുപ്പത്തിൽ എന്നെ നിരുത്സാഹപ്പെടുത്തുവാൻ കഴിയാറുണ്ട്.					
4. ഒരല്പം സഹിക്കേണ്ടിവന്നാലും നല്ലൊരു ഫലത്തിനായി കാത്തിരിക്കാൻ ഞാൻ തയ്യാറാണ്.					
5. ഞാനൊരു അലസനാണോ എന്ന് പലപ്പോഴും ചിന്തിച്ചു പോയിട്ടുണ്ട്.					
6. ഒരു ലക്ഷ്യം വച്ച് തുടങ്ങിയാൽ അത് നേടുന്നതുവരെ കഠിനമായി പ്രവർത്തിക്കുവാൻ ഞാൻ തയ്യാറാണ്.					
7. വേണമെന്ന് വെച്ചിരുന്നുവെങ്കിൽ എത്രയോ മഹത്തരമായ കാര്യങ്ങൾ എനിക്ക് ചെയ്യാമായിരുന്നു.					
8. കഴിഞ്ഞ കാലങ്ങളിലെ നേട്ടങ്ങൾ എനിക്ക് ആത്മവിശ്വാസം നൽകാറുണ്ട്.					
9. മുൻകൂട്ടി തീരുമാനിച്ച പല കാര്യങ്ങളും എന്റെ മടിമൂലം നടക്കാതെ പോയിട്ടുണ്ട്.					
10. തെറ്റുകളിൽനിന്ന് പാഠം ഉൾക്കൊള്ളുവാൻ പലപ്പോഴും എനിക്ക് കഴിയാറില്ല.					
11. എനിക്ക് പ്രത്യേകിച്ച് ഒരു ലക്ഷ്യവുമില്ല.					
12. പരാജയങ്ങൾ സംഭവിച്ചാൽ വസ്തുനിഷ്ഠമായി വിലയിരുത്തി തെറ്റുകൾ കണ്ടെത്തി തിരുത്തി മുന്നോട്ടുപോകാൻ എനിക്ക് കഴിയാറുണ്ട്.					

	ശക്തിതായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിയോജിക്കുന്നു	ശക്തിതായി വിയോജിക്കുന്നു
13. എനിക്ക് വന്നുപെടുന്ന പരാജയങ്ങളിൽ ഭൂരിഭാഗവും എനിക്ക് തിരുത്താൻ കഴിയാത്ത കാരണങ്ങൾ കൊണ്ടുണ്ടാകുന്നവയാണ്.					
14. പ്രതികൂല സാഹചര്യങ്ങളിൽ പെട്ടെന്ന് പ്രതീക്ഷ കൈവിടുന്ന ഒരാളാണ് ഞാൻ.					
15. ആത്മവിശ്വാസത്തോടെ കാര്യങ്ങൾ ചെയ്യാൻ എനിക്ക് കഴിയും.					
16. ഇഷ്ടമുള്ള കാര്യങ്ങൾ ചെയ്യുമ്പോൾ മറ്റൊരു തടസ്സവും എന്നെ ബാധിക്കാറില്ല.					
17. കഴിയില്ല എന്ന് തോന്നിത്തുടങ്ങിയാൽ പിന്നെ ഒരു കാര്യത്തിനുവേണ്ടിയും വിയർപ്പൊഴുക്കാൻ ഞാനു തയ്യാറല്ല.					
18. പല ജേതാക്കളുടെയും വീരഗാഥകൾ എന്നെ പൂജകം കൊള്ളിക്കാറുണ്ട്.					
19. വളരെ പ്രധാനപ്പെട്ട പ്രവർത്തികൾക്കിടയിലും നിസ്സാര കാര്യങ്ങൾ പോലും എന്റെ ശ്രദ്ധതെറ്റിക്കാറുണ്ട്.					
20. ലക്ഷ്യത്തിലെത്തുംവരെ ക്ഷമയോടെ പടിപടിയായി കാര്യങ്ങൾ ആസൂത്രണം ചെയ്ത് നടപ്പിലാക്കാൻ എനിക്ക് കഴിയാറുണ്ട്.					
21. അല്പം വിരസത തോന്നിയാലും സമയബന്ധിതമായി കാര്യങ്ങൾ ചെയ്യാൻ ഞാൻ പ്രത്യേകം ശ്രദ്ധിക്കാറുണ്ട്.					
E.P.					
1. എന്റെ വിഷമംതന്നെയാണ് എനിക്ക് വലുത്.					
2. മറ്റുള്ളവരുടെ വിഷമത്തെക്കുറിച്ച് ആലോചിക്കാൻ ഞാൻ തലപുണ്ണാക്കാറില്ല.					
3. അന്യർക്ക് എന്തുതോന്നിയാലും എന്റെ ആവശ്യം ഞാൻ സാധിച്ചെടുക്കാറുണ്ട്.					
4. അന്യരുടെ വിഷമങ്ങൾ പൊതുവെ നിസ്സാരമായേ എനിക്ക് തോന്നാറുള്ളൂ.					
5. ശരാശരിയിലും ഉയർന്ന സാമൂഹ്യപ്രതിബദ്ധത എനിക്കുണ്ട്.					
6. വിട്ടുവീഴ്ചാമനോഭാവമുള്ള ഒരാളാണ് ഞാൻ.					
7. എന്റെ ചില തമാശകൾ അല്പം കൂടിപ്പോയല്ലോ എന്ന് പലപ്പോഴും തോന്നാറുണ്ട്.					

	ശക്തിയാതി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായമില്ല	വിധേയമാക്കുന്നു	ശക്തിയാതി വിധേയമാക്കുന്നു
8. വളരെയധികം വിഷമിപ്പിച്ചിട്ടുണ്ടെങ്കിലും പലർക്കും മാപ്പുകൊടുക്കാൻ കഴിഞ്ഞിട്ടുണ്ട്.					
9. മറ്റുള്ളവരെ ആശ്വസിപ്പിക്കുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
10. പിടിവാശി എന്നെ പലപ്പോഴും അപകടത്തിൽപാടിയിട്ടുണ്ട്.					
11. മറ്റുള്ളവർ പറയുന്നത് ശ്രദ്ധാപൂർവ്വം കേട്ടിരിക്കാൻ എനിക്ക് കഴിയാറില്ല.					
12. ചില സന്ദർഭങ്ങളിൽ മറ്റുള്ളവരുടെ ബുദ്ധിമുട്ടുകൾ ആലോചിച്ചാൽ സ്വന്തം വിഷമം താനേമാറും.					
13. മറ്റുള്ളവരുടെ പെരുമാറ്റങ്ങളിൽനിന്ന് വളരെ പെട്ടെന്ന് അവരെ മനസ്സിലാക്കാൻ എനിക്ക് കഴിയും.					
14. തീരെ ബന്ധമില്ലാത്ത ആളുകളുടെ പോലും യാതനകൾ എന്റെ മനസ്സിനെ വേദനിപ്പിക്കാറുണ്ട്.					
15. മറ്റുള്ളവരോടുള്ള സഹാനുഭൂതികൊണ്ട് മാത്രം പലർക്കും പല സേവനങ്ങളും ഞാൻ ചെയ്യാറുണ്ട്.					
16. എന്റെ എത്രയോ വ്യക്തിപരമായ സുഖങ്ങൾ അന്യരുടെ സന്തോഷത്തിനുവേണ്ടി ഞാൻ ത്യജിച്ചിരിക്കുന്നു.					
17. മറ്റുള്ളവരെ പരമാവധി വേദനിപ്പിക്കാതിരിക്കാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					
18. ഏതൊരു പ്രശ്നത്തെയും മറ്റുള്ളവരുടെ ഭാഗത്തുനിന്ന് കാണാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.					
19. മറ്റുള്ളവരുടെ ഭാവമാറ്റങ്ങളെ എനിക്ക് പെട്ടെന്ന് തിരിച്ചറിയാൻ കഴിയും.					
20. എന്റെ അവകാശങ്ങളോടൊപ്പംതന്നെ മറ്റുള്ളവരുടെ അവകാശങ്ങളും കണക്കിലെടുക്കാറുണ്ട്.					
21. എന്റെ സഹനശക്തി മറ്റുള്ളവരുമായി സഹകരിച്ചുപോകാൻ സഹായിച്ചിട്ടുണ്ട്.					
S.K.					
1. പൊതുവെ ആളുകളുമായി ഇടപഴകുവാൻ എനിക്ക് കഴിയാറുണ്ട്.					
2. ആളുകൾക്കിടയിൽ ഞാൻ പലപ്പോഴും തെറ്റിദ്ധരിക്കപ്പെടാറുണ്ട്.					
3. ഇല്ല എന്ന് പറയേണ്ടിവരുന്ന സമയങ്ങളിൽ എന്ത് ചെയ്യണമെന്നറിയാതെ ഞാൻ കൂഴങ്ങാറുണ്ട്.					

	ശക്തിയായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭ്യപാദിപ്പിക്കുന്നു	വീര്യോജിക്കുന്നു	ശക്തിയായി വീര്യോജിക്കുന്നു
4. ശരിയെന്ന് ഉറപ്പെങ്കിലും മിക്കവാറും ചില കാര്യങ്ങൾ ചെയ്യാനോ പറയാനോ എനിക്ക് കഴിയാറില്ല.					
5. എനിക്ക് നല്ലൊരു സുഹൃത്വവലയം ഉണ്ട്.					
6. മറ്റുള്ളവരുമായി സംസാരിക്കുമ്പോൾ എവിടെ തുടങ്ങണം എങ്ങനെ അവസാനിപ്പിക്കണം എന്നൊന്നുമറിയാതെ ഞാൻ കൂഴങ്ങാറുണ്ട്.					
7. ഞാൻ പറയുന്നത് കണക്കിലെടുക്കുന്ന ആളുകൾ ഒരുപാടുണ്ട്.					
8. പറഞ്ഞുതുടങ്ങിയാൽ പ്രശ്നമാകും എന്നതുകൊണ്ട് പല സന്ദർഭങ്ങളിലും ഞാൻ മൗനംപാലിക്കും.					
9. എന്റെ ഇടപെടൽമൂലം പലരുടെ പ്രശ്നങ്ങളും പരിഹരിക്കുവാൻ കഴിഞ്ഞിട്ടുണ്ട്.					
10. മറ്റുള്ളവരുടെ വിചാരം ഞാനൊരു വഴക്കത്തിലാണെന്നാണ്.					
11. മറ്റുള്ളവരോട് കാര്യങ്ങൾ പറഞ്ഞ് ബോധ്യപ്പെടുത്തുവാൻ എനിക്ക് കഴിവുണ്ട്.					
12. ബന്ധങ്ങൾ ഊഷ്മളമാക്കാൻ എനിക്ക് പ്രത്യേകം കഴിവുണ്ട്.					
13. മിക്കവാറും ചില സാമൂഹികസന്ദർഭങ്ങൾ എനിക്ക് ഭീതിജനകമാണ്.					
14. എന്റെ സാമീപ്യം മറ്റുള്ളവരിൽ സന്തോഷമുണ്ടാക്കുന്നത് ഞാൻ ശ്രദ്ധിക്കാറുണ്ട്.					
15. ഏകാന്തത ഞാൻ കൂടുതൽ ഇഷ്ടപ്പെടുന്നു.					
16. ഞാൻ ആരുടെകാര്യത്തിലും ഇടപെടുന്നില്ല. എന്റെ കാര്യത്തിലും (ആരും ഇടപെടട്ടെ. അതാണ് എന്റെ രീതി.					
17. ആവശ്യമെന്ന് തോന്നുന്നപക്ഷം കാര്യങ്ങൾ സ്വയം ഏറ്റെടുത്ത് നടത്താനും മറ്റുള്ളവരെ ഒത്തിണക്കത്തോടെ കൊണ്ടുപോകാനും എനിക്ക് കഴിയും.					
18. അനുഭവങ്ങൾ പങ്കുവയ്ക്കുന്നത് സുഖമുള്ള ഒരേർപ്പാടാണ്.					
19. എന്റെ വികാരങ്ങൾ ശരിയാക്കുവാൻ പ്രകടിപ്പിക്കാൻ എനിക്ക് കഴിയാറില്ല.					
20. മറ്റുള്ളവർ എന്നെ കാര്യങ്ങൾ വിശ്വാസത്തോടെ ഏല്പിക്കാറുണ്ട്.					
21. ഞാൻ പൊതുവെ അഭിമതനായ ഒരു വ്യക്തിയാണ്.					
22. ആളുകൾ കൂടുന്നിടത്ത് പോകാൻ എനിക്ക് മടിയാണ്.					
23. മറ്റുള്ളവരോട് കാര്യങ്ങൾ പറഞ്ഞ് ബോധ്യപ്പെടുത്താൻ എനിക്ക് കഴിവ് കൂടുതലുണ്ട്.					

