Review of related literature

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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 Jahoda (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 with in 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 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
substrates 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 ongoing 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 our 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.
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 bad 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 adrenocorticotropic 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 ACTH. 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 skeletomuscular 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 sable 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 emotionally, 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. Temper 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 clasping, 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 are 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 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 scheme 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 emphasize 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 our 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.

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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. One 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 mirrors 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 lick 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-
esteeem (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 other 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 are 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 attributed 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 of 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 beings. 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, epidemiological 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 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-
esteeom/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 somewhere 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. Apitzsch 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 on 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 crush, 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 of 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. Eyseck 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 baseball 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 persona 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 treadmill 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 predictable 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 n 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 leads 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, Speilberger'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 10\textsuperscript{th}, 11\textsuperscript{th} and 12\textsuperscript{th} 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 assertive. Apparently, outstanding athletes have similar personality characteristics, regardless of being male or female (Weinberger 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

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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-filed 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-filed 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 Cattel’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 sorts 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).
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 in 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 Inertia+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 (Mcrally, esthetically and socially) situations cause stress in them and create state of intense and prolonged anxiety or deep depression. Unbearable pronged 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.
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.

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 (El) 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 El however, received popularity by Daniel Goleman in 1995.

Even though the term El 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 El as a type of social intelligence, but the difference is that compared with social intelligence El 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 a 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.

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<td><strong>Overall Definition</strong></td>
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| “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”. | “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”. | “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”.

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

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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 El 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: El 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, contended, 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 & Sasikumar 2002).

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, (Bottertll and Brown, 2002)

In examining the functions, some important disclaimers are noted by Bottertll 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 of 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. Furthermore, 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 psychophysiological 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. Moreover, 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 Wegget 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 adapt 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 setbacks 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 that 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 distract 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 exists 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.