

## EMOTIONAL INTELLIGENCE

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### ABSTRACT

Emotional intelligence is defined as having the personal skills that characterize a rich and balanced personality. Emotional intelligence includes non-cognitive skills and capabilities that determine the person's ability to cope with environmental demands and pressures. The concept of emotional intelligence has emerged as a result of the inability of the existing measures to predict the degree of success in life. The more emotional skills a person has, the less risk there is of developing psychiatric problems. The main elements of emotional intelligence include self-awareness, managing emotions, self-motivation, empathy, and handling relationships. Emotional activities can be considered as the result of interplay between the neural activity of the hypothalamus and the activity of higher brain centers. Amygdala is central to fear and related acute emotional reactions. The interactive work of the cortical and subcortical circuits, especially the connections between the amygdala and the prefrontal areas constitute the components that make up the emotional intelligence. Although some emotional traits seem to be genetically determined, emotional intelligence skills are to a great extent learned through experience. It is also possible to improve emotional intelligence skills through professional guidance. Emotional intelligence contributes to success in educational or organizational context, effective leadership, and physical health.

**Key Words:** Emotional intelligence, Success, Brain, Leadership, Health

### INTRODUCTION

Emotional intelligence is defined as having the personal skills that characterize a rich and balanced personality (1). Emotional intelligence is about knowing what you are feeling, being able to manage your feelings without letting them take your control, being able to motivate yourself, perform at your maximum and be creative, being able to recognize what others are feeling, and handling relationships effectively. Emotional intelligence includes non-cognitive skills and capabilities that determine the person's ability to cope with demands and pressures of the external world (2).

The concept of emotional intelligence has emerged at least partially as a result of the inability of the existing measures of "rational thinking" (e.g. IQ tests) to predict the degree of success in life, in educational or organizational context. According to Goleman (3) IQ contributes only partially to the factors that determine success in life. Although a minimum baseline IQ is necessary for effective performance, IQ seems to be insufficient alone for success. Various personality characteristics previously not taken into consideration are now found to be related to success in life (4,5).

According to Goleman (1) the human brain has two kinds of intelligence, rational and emotional. Emotion contributes to and informs the operations of the rational mind, which in turn modulates and filters emotional input. The rational mind operates according to objective evidence. Therefore, beliefs can be changed when new evidence appears. The emotional mind, on the other hand, acts according to its own values and beliefs, ignoring the rest that do not fit. The best performance is achieved when emotional intelligence and intellectual ability work in harmony. Although emotional intelligence and IQ are considered to be largely independent from one another, people with a very high IQ and a very low emotional intelligence or vice versa are rare except in cases of severe mental disorder (1).

The more emotional skills a person has, the less risk there is of developing psychiatric problems like anxiety and mood disorders.

## **MAIN ELEMENTS OF EMOTIONAL INTELLIGENCE**

The main elements of emotional intelligence include self-awareness, managing emotions, self-motivation, empathy, and handling relationships.

**Self-awareness** is being able to identify how one feels and why he feels that way. Being aware of one's emotions is the primary emotional competence upon which abilities like emotional self-control are built. Various aspects of self-awareness are also important for psychiatric disorders as affective disorders and schizophrenia (6).

**Managing emotions** is giving an appropriate reaction to a stimulus and handling negative feelings like sadness, anxiety, anger, or depression. This ability is crucial for coping with the setbacks of life. Appropriate modification of self-control mechanisms is the subject of some psychotherapy strategies.

**Self-motivation** is being able to monitor various emotions, drives, etc. and initialize oneself for action to achieve a specific goal. Optimism, being able to delay gratification, and controlling

impulsive behavior are the necessary skills for achievement in life. The initialization of the organism for action is very important for mental health, any inappropriateness or instability in motivation related activities might have overwhelming consequences even if the rest of the system works perfectly.

**Empathy** is the ability to understand other people's emotions. This is the key skill for successful interpersonal relationships, both in private and professional life. Understanding other people's mental activities, to mentalise, is crucial for the manipulation of the human external world. The ability to mentalise is impaired in some schizophrenic patients and autistic children (7).

**Handling relationships** is basically the skill of being able to establish and maintain satisfactory human relations. One should be sensitive to others' emotions and be able to manage conflicts for appropriate handling of relationships. Interpersonal problems constitute the basis for various mental disorders.

Processing the facial expressions of others has a unique place in developing empathy and interpersonal relationships. In a recent study, significant differences between subjects with autistic disorder and controls were found during the processing of facial expression in the activity of early visual and auditory cortices, despite the fact that the groups were matched on the basis of age, IQ, education and occupational level. There were also significant differences in the relative patterns of activity during the explicit and implicit processing of facial expressions in the cerebellum, mesolimbic areas, and lateral temporal lobe (8).

## **NEURAL CORRELATES OF EMOTIONAL INTELLIGENCE**

Emotional activities can be considered as the result of the interplay between the neural activity of the hypothalamus and the activity of higher brain centers (9). Anterior limbic and paralimbic structures are the most consistently reported related brain areas (10). Limbic areas are connected to all parts of the neocortex. Therefore, the emotional centers have a large power over the brain functions.

When a strong emotion arises, it may effect the functions of the mental apparatus. When signals of emotional stress arrive from the limbic area to the prefrontal cortex, which is the main location of the executive functions and working memory; functions like thinking, planning, and response inhibition are disturbed. On the other hand, pure rationality without emotional contribution is not enough or can even be maladaptive when making important decisions like choosing a spouse or a career (11). The key for making the right decision is the balance of rationality and emotions.

Amygdala is central to fear and related acute emotional reactions (12). During fear and anxiety reactions amygdala stages a sort of "neural hijacking" (1). Through its widespread connections with almost every major center of the brain, amygdala triggers the fight or flight responses of the organism. Related hormones are secreted, cardiovascular system is activated, and muscles are stimulated. To prevent extreme bleeding in case of injuries, the viscosity of blood is increased. Increased norepinephrin heightens the reactivity of key brain areas, so alertness and responsivity of the neural system is increased.

Amygdala receives direct input from thalamus that bypasses the neocortex. This by-pass allows unconscious information processing which might be conducted within milliseconds of receiving an information, and as a result of this quick processing positive or negative charges for an object can be generated.

According to Goleman (1) the interactive work of the cortical and subcortical circuits, especially the connections between the prefrontal areas and the amygdala constitute the components which make up the emotional intelligence.

Prefrontal cortex can be defined as the motor cortex of the highest order. In evolution, it reaches its maximal relative growth in the human brain, and constitutes nearly one-third of the total neocortex. Prefrontal cortex is important for the executive functions of the brain, it is also named as the 'executive of the brain' and as the 'organ of creativity' (13). The executive functions include initiation of independent activities, self monitoring of performance, inhibition of inappropriate responses, switching between tasks, flexibly

handling unexpected situations, modifying behavior according to feed-back, planning and control of complex motor and problem-solving responses (14,15).

It has been known for a long time that patients with prefrontal injuries are abnormally distractible, tend to perseverate, and have difficulty in controlling impulsivity and instinctual behavior (14,15). Probably serotonin is also involved in some aspects of self-control mechanisms at various levels to inhibit impulsive and socially inappropriate behavior (16). Administration of selective serotonin reuptake inhibitors to normal volunteers have been able to reduce hostility, decrease negative affect, and increase social affiliation of these individuals (17).

An interesting point is that the circuits of the prefrontal cortex are the last in maturation; in fact, not until the age of 14-15 (13). This is important in teaching children to learn the necessary requirements of emotional intelligence.

## **DEVELOPMENT OF EMOTIONAL INTELLIGENCE**

Our personal way of reacting to the objects, events, inevitable negative or positive aspects of external world are not always under our conscious awareness or control. It is possible to improve our awareness of our own behaviour and the mechanisms behind it, if not in our natural environment, through professional guidance via our higher mental circuitry and neural plasticity.

Plasticity of the neurons implies the fact that the neural cells are shaped by repeated experience whereby the related circuits are strengthened and the circuits that are not used are often weakened (use or lose principle).

Appropriate synaptic plasticity is important for mental health. For example, the characteristics of delusions such as the inability of the patient to be reasoned out of an aberrant belief, and the inability of the belief system to incorporate new information are suggested to be associated with neural plasticity abnormalities (18).

Emotional intelligence skills are to a great extent learned through experience. Although some traits like shyness seem to be genetically determined, the experience gained in childhood may enhance or decrease the expression of the trait (1). The limits of external exposure, the opportunities of expressing oneself, the chance of receiving feedback (information about positive and negative aspects of a behavior), appropriate indirect information (receiving advice from others, reading books), and modeling (observing adaptive behaviour, stress management strategies of others, i.e. parents) are important for the acquisition of adaptive behavioral skills.

Every kind of learning process whether emotional or intellectual makes a physical alteration in the synaptic characteristics. For example, the circuit of the nervous vagus, which is the primary locus for the "fight or flight" response is subject to change throughout childhood. Appropriate parenting may lead to better vagal tonus in children (19).

The role of appropriate parenting is, of course, very important as a person's character is shaped early in life. If the parents themselves possess good emotional skills and have a harmonious relationship, the children also learn to cope with emotional problems more effectively.

Through psychotherapy, inappropriate or pathologic emotional patterns can be rehabilitated. Most of this process constitutes emotional relearning. According to Goleman (1) this occurs through the controlling action of the prefrontal cortex over the reaction of the amygdala, and although the initial reaction of the amygdala cannot be fully extinguished, emotional relearning can control the severity and the duration of these responses.

Educational programs, if implemented during childhood and adolescence in schools, can be of much benefit to the emotional well-being of society in the long run. As has been noted earlier, the prefrontal cortex continues its maturation all through adolescence making it possible to reshape inappropriate emotional responses (3).

Programs starting in kindergarten may be especially helpful, as preschool years are the

most important ones for acquiring the basic emotional skills; school-based programs that promote social and emotional learning in children can be useful in preventing behavioral problems, producing knowledgeable, responsible, nonviolent, and caring individuals (20-22). Empathy and emotional self-regulation start their development at birth. Preschool years are when social emotions like jealousy, pride, confidence, etc. are shaped. Primary school has a very important influence on a child's later life. School achievements influence the development of self-confidence. Children learn to postpone gratification, control their emotions and impulses, and become socially responsible in school. Starting high school is another hallmark of emotional development. Having friends is very important at this stage and therefore emotional coaching in relations requires specific attention. The best result can be achieved if these programs work in parallel with children's private lives in cooperation with their parents.

If a child grows up with the skills of emotional intelligence, it is less likely that he will need supportive psychological intervention like psychotherapy in adult life (1).

## **LEADERSHIP AND EMOTIONAL INTELLIGENCE**

Feelings have been shown to influence the judgments that people make, material recalled from memory, attributions for success and failure, and creativity. Feelings also play a central role in the process of leadership which requires coordination and integration of others' activities and work.

Effective leadership includes the following essential elements: Development of a collective sense of goals and objectives and how to achieve them. These activities may also be referred to as the vision of the leader for the organization: Instilling in others knowledge and appreciation of the importance of work activities and behaviour; generating and maintaining excitement, enthusiasm, confidence, and optimism in an organization as well as cooperation and trust; encouraging flexibility in decision-making and change; establishing and maintaining a meaningful identity for an

organization (23). Almost all of these elements require emotional intelligence skills.

Leaders who experience anger frequently may have a difficult time building good relationships with their followers. A leader who frequently experiences positive moods on the job may fail to notice performance deficits that are not obvious. When leaders know and manage their emotions, they may be better able to flexibly approach problems, consider alternative scenarios, and avoid rigidity in decision making.

Leaders should be able to distinguish between the emotions their followers are actually experiencing, their real feelings, and the emotions they express. We can voluntarily try to interfere or disguise expression of our emotions in a given social context (24). Effective leaders need to be able to distinguish between, for example, excitement, and enthusiasm that are faked versus excitement and enthusiasm that are genuinely felt.

Emotional intelligence may contribute to a leader's ability to successfully implement changes in an organization. People who can accurately assess how others feel and handle these feelings in productive ways are much more likely to be able to effectively overcome resistance to change.

Researchers are beginning to argue that intrapersonal and interpersonal competencies, or emotional intelligence, may be of increasing importance to managers in the new millennium. It is important, then, for some schools, for example business schools, to consider ways to integrate emotional intelligence training into their programs. Because social and emotional learning is processed differently than is cognitive or technical learning, it may require a different training and development approach (25).

## **EMOTIONAL INTELLIGENCE IN MEDICINE**

Another important topic is the role of emotional intelligence in medicine. Emotions play a very important role in physical health. It has been demonstrated that the central nervous system and the immune system are interconnected (26).

Recovery from illness is faster if the patients follow special emotional support programs along with appropriate medical care. Anger, chronic hostility, anxiety, and pessimism have negative effects on health. Chronic stress may increase vulnerability to infectious disease, and depression has been associated with functional immune decrements and immune overactivation. Cognitive states such as perceived control, views of the self, and views of the future have also been associated with immune parameters and health (27). Therefore, to help people cope with their emotions is a very important issue for medicine which is the science and art of preventing, alleviating, or curing disease (28).

## **CONCLUSION**

Currently, we do not have satisfactory and established methods for the prediction of success in life. Therefore, efforts to develop appropriate measurement tools for various aspects of human mental capacity should be encouraged. Another point is the changing circumstances of the new millennium; it is not easy to predict which skills and values and what kind of mental apparatus will serve our children best in the future.

The reality about the innate nature of man lies somewhere in the middle of the following views: 1) man is basically aggressive and competitive, and 2) man is basically good natured and cooperative. Competition and cooperation are the fundamental aspects of human behaviour. The important thing is to know how to cooperate and how to compete, and maybe even more important is the ability to differentiate whom to cooperate with and whom to compete against.

The fight or flight response is not adaptive in most of the social and professional situations, instead a flexible mental apparatus which does not make short circuits might be very useful and effective.

Behavioral sciences should not only focus on the behavioral problems, but should also try to provide peak performance and self actualization of individuals in private and professional settings.

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