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Where emotions are born: how emotional intelligence is formed

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Abstract. Emotions play one of the most integral roles in human experience, but it is still considered difficult to explain scientifically. From an evolutionary perspective, emotions greatly contribute to the ability to survive. If until recently we were talking about an epidemic of affective disorders and that they occupy a leading position in the structure of brain diseases, now the situation is aggravated by a dramatic increase in the number of affective disorders during the COVID-19 pandemic. In this article, we discuss the anatomical and biochemical basis of emotion formation and how it relates to cognition and emotional intelligence.

Key words: limbic system, emotion, emotional intelligence.

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Emotions play one of the most integral roles in human experience, but it is still considered difficult to explain scientifically. From the evolutionary perspective, emotions greatly contribute to the ability to survive. If until recently we were talking about an epidemic of affective disorders and that they occupy a leading position in the structure of brain diseases, now the situation is aggravated by a dramatic increase in the number of affective disorders during the COVID-19 pandemic.

The aim of the article: in this article, we discuss the anatomical and biochemical basis of emotion formation and how it relates to cognition and emotional intelligence. In the current abstract based on literature and our own data, we discussed the modern approach to the understanding the nature of emotions. The limbic system refers to the set of structures in the brain that plays an important role in emotional regulation and is responsible for the regulation of autonomic and endocrine function in response to emotional stimuli. It is made up of four main parts: the thalamus, the amygdala, the hippocampus and the hypothalamus. These structures appear to have very different connections and functions [1].

Because of the different connectivity and functions of these limbic structures in emotion and in memory, it has been suggested that the concept of a single 'limbic system' is not realistic, and that we should consider separately the connectivity and functions of different limbic structures in emotion and memory [2]. In addition, it was also suggested that the basic emotions share specific neural basis, because they can be differentiated with monoamine neuromodulators, such as dopamine (DA), serotonin (5-HT), or norepinephrine (NE). Thus it was introduced a new emotional theory based on the three monoamines, which can be called "three primary color model of basic emotions"[3].

Memories play a ubiquitous role in our emotional lives. Controlling the emotional impact of memories therefore poses a major emotion-regulation challenge. [4]. Conclusions: in this regard, it is very important to discuss the concept of emotional intelligence. Therefore, EI may be intended as a complex neuropsychological function that could be impaired in many clinical conditions [5].

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