



PHYSIOLOGICAL, COGNITIVE AND BEHAVIORAL ASPECTS OF DEPRESSION

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ABSTRACT

The current society, due to the technological advance, excessive collections, reigning individualism, among others, is faced with a significant increase of individuals with depression, according to COSTA (2010). Some authors conceptualize depression as a disease where the individual feels inferior to everything and everyone, with no capacity and willingness to face the challenges, because it presents a feeling of fear of failure, thus promoting a reduction of the feeling of pleasure, irritability, feelings of guilt and, in more serious cases, suicidal thoughts. According to RIBEIRO et. al. (2007) in their studies, the concept of depression is applied to a mood disorder, encompassing cognitive, behavioral, physiological, social, economic and religious factors, since depression is considered an evil that is rooted in the individual's "I" interfering in a negative way the course of their thoughts and decisions. In addition to these characteristic feelings of depression, COSTA (2010) points out that depression also generates disorders at the brain level, due to the dysregulation of essential neurotransmitters, as well as the reduction of cognitive function, which promotes the formulation and decision of an adequate response front to a stressor event.

KEYWORDS: Depression; mood disorder; physiological depression, behavioral aspects.

1. INTRODUCTION

From the beginnings of society, one realizes that the individual is surrounded by diverse feelings, giving prominence to feelings of hopelessness, apathy, indifference, diminished pleasure, since they are feelings characteristic of depression. It is possible to say, then, that depression and the attempt to understand it were already issues in the life of the individual since Antiquity (PARANHOS & WERLANG, 2009), since they could be only natural feelings of the human being, or still be a result of an imbalance of the organism, in other words, a disease. And even with technological and scientific advancement over the years, society has been unable to determine the symptoms and components that can effectively claim the diagnosis of depressive symptoms. According to COSTA (2010), one of the fastest growing diseases in the population today is depression. This high level of depressive illness in recent years can be translated through some studies in the field of general medicine, which suggests a 3-10-fold increase in the occurrence of this disease, which shows a redistribution by age and gender, since the depression already reaches an age range between 15-44 years, maintaining a prevalence in women (10- 25%), whereas in men this incidence is lower, 5-12% (PARANHOS & WERLANG, 2009). According to data from the WORLD HEALTH ORGANIZATION (2001), depression is considered the main disability factor measured by the Years of Life Lost, due to premature deaths and the fourth leading

cause of morbidity and loss of quality of life measured by Years of Adjusted Life Inability. The World Health Organization's projection is that these numbers be increased by 2020, reaching all ages and both sexes, and it is even predicted that depression can be seen as the evil of the 21st century (PERES, 2006 apud PARANHOS & WERLANG, 2009), because BOTEGA et. al. (2006) present data that every 20 individuals, one is hit by a depressive episode during their life, and every 50 diagnoses, one presents the need for hospitalization and 15% commit suicide.

From these data, it is seen that depression is a disease considered a very serious public health problem, since it generates high social costs and the continuous risk of suicide (HEXSEL, 2004), besides the fact that the depressive individual has their personal and social lives are considerably affected, for example, these individuals use medical services more often, they present a reduction in their productivity at work and their quality of life, especially when associated with chronic diseases (Fleck et al. 2002). These attitudes of the depressed individual are due to the fact that this individual presents a subjective feeling of sadness, for example DEL PORTO (1999) describes this sensation from the reduction of the capacity to feel pleasure by the activities in general and the interest in the environment; other authors still claim that the depressive individual presents with psychomotor alterations, referring to a process of psychomotor

retardation or retardation, or, according to DELOYA (2002), depression is characterized as a state in which the individual considers himself incapable of finding ways of to deal with the new demands of contemporary society through reigning individualism, excessive collections of competence in work, technological advancement and / or unemployment, reaffirming the analysis given by COSTA (2010), where depression is seen as a growing disease in today's society , mainly because of this technological expansion, requiring excessive speed and skills of individuals, overloading them with duties and obligations and limiting their moments of pleasure, distractions, affective relationships, among others.

2. LITERATURE REVIEW

2.1. Depression

DEL PORTO (1999) uses the term depression to designate an affective state, such as sadness; a symptom, where the individual presents post-traumatic stress disorder, dementia, schizophrenia, alcoholism, clinical diseases; a syndrome, including not only mood changes, such as sadness, irritability, decreased sensation of pleasure and apathy, but also some cognitive, psychomotor and vegetative changes (sleep, appetite); or a disease, such as major depressive disorder, melancholia, dysthymia (chronic depression), etc., presenting a reduction in the capacity to feel pleasure for activities in general and interest in the environment; other authors still claim that the depressive individual presents with psychomotor alterations, referring to a process of psychomotor retardation or retardation. This concept, given by DEL PORTO, strengthens the concept established by HOLMES (1997), which states that depression may appear in the individual as a symptom of a particular disease, or be associated with other emotional states, or may appear as causes of suffering. According to LAFER & AMARAL (2000), depression is conceptualized as an inalterable and lasting sensation, where the individual feels worthless, the world loses its meaning and there is no hope for the future. According to the WHO (2003), depression has as main symptoms the depressed mood continued, generating the loss of interest or pleasure in performing various activities, as well as decreased appetite, changes in weight, sleep and psychomotor activity, fatigue, feeling guilt, irritability, attention deficit, suicidal thoughts. PICCOLOTO et. al. conceptualize depression as a mood disorder, characterized by various affective manifestations that are inadequate in relation to intensity, frequency and duration, involving a great variety of symptoms, including sadness, anguish and hopelessness, low self-esteem, inability to feel pleasure, feeling of guilt, pessimism for the future, thoughts related to death, and accompanied by somatic changes, such as sleep, appetite, psychomotor activity and sexual function.

For Deloya (2002), depression is characterized as a state in which the individual considers himself incapable of finding ways to cope with the new demands of contemporary society, through reigning individualism,

excessive charges of job competence, technological advancement and / or unemployment . Still in relation to the concepts, RIBEIRO et. al. (2007) characterize depression as a mood disorder, encompassing cognitive, behavioral, physiological, social, economic and religious factors present in various emotional disorders. COUTINHO (2005) apud RIBEIRO et. al. (2007) considers depression as an evil that is rooted in the individual's 'I', blocking their wills and negatively directing the course of their thoughts, interfering with their self-concept, harming the subject both in the psychosocial and individual contexts. And, according to WOLD HEALTH ORGANIZATION (2010) apud COSTA (2010), depression is considered a psychiatric illness, very evident in today's society, whose main symptoms are depressed mood, loss of interest and pleasure, guilt, low self-esteem, sleep and appetite disturbances, fatigue, reduced concentration, among other characteristic symptoms, and with these symptoms the individual is susceptible to emotional, intellectual and social problems, and in some cases more severe lead to suicide. However, it is important to differentiate and distort depression from only one episode of sadness in the individual's life, since it is part of the existence of the human being to feel moments of unhappiness (GELDER et al., 2006). Taking into consideration the various concepts above, depression develops from a stressor stimulus, generating an increase in the production and secretion of a hormone, adrenaline, which will stimulate manifestations, such as physiological and psychological disorders, which will cause a imbalance of homeostasis, initiating an emotional state, called stress.

Then, through cognitive, behavioral and physiological aspects, the individual analyzes and seeks answers to a certain situation that causes this stress, in order to select appropriate behaviors and actions, in addition to preparing the organism. However, this interaction varies between individuals, in relation to the responses and presentation before a stressful situation, and according to MARGIS et. al. (2003), with this stressful situation, may occur "diverse psychopathological manifestations as nonspecific symptoms of depression or anxiety, or psychiatric disorders", through traumatic events occurred over the years. Therefore, COSTA (2010) demonstrates, through evidence from neuroscience, genetics and clinical research, that depression is a disease that generates disorders at the cerebral level, because, in the period in which the individual is in an emotional state characteristic of depression, nervous system connections responsible for mood, thought, sleep, appetite, behavior, in the end, by the sensations in general, are not working properly, as there is a deregulation of essential neurotransmitters. For a better understanding, these events were classified into two types; the dependents, when there is the participation of the individual, that is: "Depends on the way the subject is placed in interpersonal relations, as it relates to

the environment, where his behavior causes unfavorable situations for himself" (MARGIS et al., 2003);

And the independent events, which go beyond the will and the participation of the individual, that is, are the inevitable events, like the death of a relative, among others. It is also taken into account that, in some cases, the development of depressive symptoms may be facilitated by some diseases, such as infectious diseases, Parkinson's disease, mental illness, hormonal diseases and substance dependence (COSTA, 2010). According to FANCHER & KRAVITZ (2010), some drugs can also be a facilitator of depression, as in the case of corticosteroids, some antihypertensives, immunosuppressants, among others. It is also important to highlight the fact that women are more likely to develop episodes of depression than men, since COSTA (2010) suggests that hormonal differences, especially in adolescence, in the first year postpartum, in menopause and post menopause, are important factors in triggering the depressive picture, but this gender issue is still an area that needs further investigation.

2.1.1. Cognitive Aspects

Faced with a stressful event, the response organized by the organism depends on how the individual considers this event, which may be relevant, pleasant and terrifying, from which the body determines what the appropriate response will be. MARGIS et al. (2003) classify the stressor event in four stages of evaluation, the first being an automatic initial evaluation, where it will be analyzed whether the stressor stimulus causes any threat or not to the individual; the second stage presents an assessment of the demand of the situation, that is, the stressor event will be analyzed taking into account the personal history of the affected individual and their previous learning and experiences; in the third stage, the evaluation of the capacities that the individual has to deal with the stressor event occurs; and finally, in the fourth stage, the organization of the action and the selection of the appropriate response to this particular stressor event occurs. POWELL et al. (2008) suggest that individuals with depression believe and act as if situations and moments are worse than they really are, and when that thought is associated with a negative view of self, for example, the individual does not consider himself useful, important, capable of being happy, refer to a suicidal thought, as the only possible solution in the face of an exaggerated perception of the situation. These attitudes and thoughts are considered by POWELL et al. (2008), as cognitive distortions, that is, the individual sees and analyzes their experiences in an absolutist and inflexible way, where an early conclusion is made, and usually with little evidence; the depressed individual has a tendency to choose evidence of poor performance; generalization, considering that a negative event will occur more often; and presents a personal perception of negative character.

2.1.2. Behavioral Aspects

Basically, we have three behavioral responses to stressful events, coping, when the individual prepares, activating physiological structures that will be mobilized to "attack" the stressor stimulus; avoidance, when the individual does not find solutions and ways to handle and cope with the stimulus, resorting to escape and, finally, passivity, where the individual is in a state of collapse. Therefore, POWELL et al. (2008) consider depression as a vicious circle, where the individual is withdrawn in relation to the previous stressful events, which were not successful, however, this attitude of withdrawal generates a lack of positive reinforcement for this individual, affecting in the interpersonal interactions or task conclusions, claiming, for example, that there is no solution for them. In other words, the individual who developed a depressive condition presents with social withdrawal, crying crises, suicidal behavior, psychomotor retardation and generalized slowdown, with the individual referring to the sensation of heavy shoulders (DEL PORTO, 1999).

2.1.3. Physiological Aspects

The defense instinct of the individual's body is activated when it receives an aggressive stimulus and thus causes various brain structures to activate, according to the level of threat perceived by the affected individual. The structures involved in these defense mechanisms against a stressor stimulus would be the amygdala and the septo-hippocampal system, according to BRANDÃO ML et al. (2003), is the system responsible for the detection and evaluation function of stressors, establishing the degree of threat of this stimulus, determining the objectives and action plans to be executed, aiming at reducing the effects of the interference produced by stressors. Still in relation to the physiological aspects, the neurotransmitters undergo great influences and alterations when receiving a stress stimulus, involving different hormones, like noradrenaline, dopamine, serotonin, denominated of biogenic amines; some amino acids, such as gamma-aminobutyric acid (GABA), glycine, glutamate; certain peptides such as corticotropin releasing factor (CRF), adrenocorticotrophic hormone (ACTH) and colecystisinin (CCK) and steroids (corticosterone). With the stressor stimulus the noradrenaline hormone is synthesized by specific neurons found in the ceruleus locus, which is part of the limbic system. This system is connected to the basal ganglia and the lateral hypothalamus and its dysfunction is responsible for the altered emotions, according to Graef & Brandon (1993), SADOCK & GREBB (1994), LAFER, RENSHAW & SACHS (1998) and KAPLAN. The cells of the locus ceruleus, when activated by the stress stimuli, generate a characteristic reaction of fear, that is, the limbic system, through the cells of the locus ceruleus, has the function of alerting and leaving in a state of vigilance the organism of the individual, preparing for emergency situations. The locus ceruleus innervates regions such as the hippocampus, amygdala and temporal neocortex and, with the stressor stimulus, there is an increase in noradrenaline, which

would result in an increase in the evoked monosynaptic response (MARGIS et al., 2003), that is, noradrenaline causes the region responsible for memory to be activated and, thus, memories of situations threatening and or similar to the stressful event, to which the individual is being subjected, to be evoked (remembered), generating a state of alertness, vigilance.

Another hormone directly linked to the surveillance state, is dopamine, which has its level of production increased with the stressor stimulus, resulting in a state of hypervigilance. In contrast, a hormone with an important adaptive function found in the body is serotonin, because its action inhibits the escape and attack behaviors, coming from a state of alert, and causes the individual to seek answers and more appropriate strategies of action. However, when this hormone decreases, consequently, the serotonergic function is also reduced, which would cause an increase in the production of the hormone dopamine, generating hypervigilance in the individuals.

In their study, MARGIS et al. (2003) emphasize that, "In situations where the danger is near, the individual will react with vigorous behaviors in the fight or flight. For this, cardiovascular changes are necessary, constituting in elevation of the arterial pressure, tachycardia, vasoconstriction in the skin and in the viscera and vasodilation in the striated muscles, as well as hyperventilation,

A general increase of the activations of the organism occurs, maintaining a different degree of selectivity, depending on the event and the stressor stimulus, differentiated through three axes (LABRADOR et al., 1994): neural axis, characterized by its immediate activation, resulting in the activation of the autonomic nervous system and the peripheral nervous system, resulting in an increase in heart rate, blood pressure, a sensation of dryness in the mouth, intense sweating, a "knot" in the throat, limb tingling, pupils and difficulty breathing; neuroendocrine axis, has its activation a little slower than the previously described axis, it being necessary that the stressor stimulus has a longer lasting character, this axis has the function of activating the adrenals, which will produce the catecholamines, that is, adrenaline and noradrenaline, with the effects of increasing blood supply to the brain, stimulation of striated muscles, fatty acids, triglycerides and cholesterol in the blood, secretion of endogenous opioids, and decreased blood flow to the kidneys, gastrointestinal tract and skin, in addition to effects on the previous axis; and, finally, the endocrine axis, with slower activation and its effects have a longer lasting characteristic, inhibiting any coping strategy generated by the organism and its effects on the individual, increased glycogenesis, increased production of ketone bodies, exacerbation of injury increased urea production, increased release of free fatty acids in the circulation, increased susceptibility

to atherosclerotic processes and myocardial necrosis, changes in immune mechanisms and decreased appetite.

Issues such as genetics and the environment in which the individual is inserted, also exerts influence in the development of the depressive picture. BROW et. al. (1987) apud MARGIS et. al. (2003), based on a review of 10 studies with depressed women, concluded that 83% of these women had a previous depressive event, but not all the women who participated in the studies and who suffered some type of stressor event, later developed the depressive picture. Thus, most depressive cases can be considered to have arisen after the individual has experienced some stressor event, but not all individuals exposed to a stressor stimulus have evolved into a depressive condition, which leads us to the question of individual variability, that is, each individual has a way of acting and behaving through a stressful event, also influenced by the genetic factors of the individual.

For example, the individual affected by a certain stressor event may select this event as being negative and at risk and his or her body remains in a state of alertness or hypervigilance, in this way, individuals with these stress coping characteristics become more susceptible to depression, since individual variability exerts a strong influence in relation to the individual's susceptibility to develop or not a depressive picture, since they differ in the way they evaluate and face a stressor event, whether dependent or independent, or even to be more prone to cause dependent events because, according to CAMON (2001), depression arises according to the person's characteristic, that is, how the individual is affected by changes in their mind function and the tendency that individual has in distorting the way you see and perceive the world.

Even though these symptoms of depression are well defined, we can not ignore the fact that depression is also related to subjective factors (PARANHOS & WERLANG, 2009), which is why the diagnosis, especially the early diagnosis of depression, if something difficult and requires preparation by the professionals.

2.1.4. Classification of depressive states

The clinical picture of depression can be classified according to the depressive states in which the individual is. According to the INTERNATIONAL CLASSIFICATION OF DISEASES (WHO, 2010), the main classifications of these depressive states are: bipolar affective disorder, being subdivided into bipolar I disorder (including the occurrence of a single manic episode, ie whether or not it presents psychotic symptoms) and bipolar II disorder (occurrence of a current or recent episode characterized as hypomanic or depressive); a major depressive disorder characterized by the presence of depressed mood or lack of interest or pleasure for a period equal to or greater than two weeks; dysthymia or chronic depression, have a lighter intensity than the major depressive disorder, where the individual

does not enjoy the habitual activities, for example (DEL PORTO, 1999).

3. CONCLUSIONS

It was concluded that, through this bibliographic survey, depression is beginning to cause concern in today's society, since it is in increasing development, with no age or gender limit, being considered an extremely serious public health problem. This is due to the fact that individuals are less and less active, that is, sedentary, due to the technological advance, since society demands of the individual speed, competence, perfection and productivity, where moments of pleasure and rest are seen with bad eyes, already that if the individual is stopped, it means that he is not producing.

Therefore, the excess of demands and demands on the part of the present society, the sedentarism and the lack of adhesion in physical trainings, generates a great pressure in the individual, causing anxiety, that in turn causes the individual to feel fear (or even even fear) in not being able to be accepted in society or fail to face the challenges imposed, then there is a certain withdrawal, lack of will to try to solve problems, feelings of inferiority and lack of pleasure in performing daily activities. And then, through resistance training, the individual begins to have an improvement in their self-esteem, self-control and consequently, feel safer to perform their tasks and society. Besides stimulating the production of hormones favorable to the control of anxiety, stress and pleasure.

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