

Neurology of Clinical Depression

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Literature Review

Those individuals who are consistently facing the problem of despair and hopelessness are showing signs of depression. Facing such a kind of major depression, these people reduce their activities with friends and peers. Their daily routine, along with eating, working, and sleeping, makes it difficult for them to pursue a normal mood. Depressive mood influences the behavior of the individual, which leads to the occurrence of certain changes in individual personality. Depression affects and influences the brain, along with the technological aspect associated with the intervention of the brain. There are other problems associated with depression, such as suicide, a low adaptation to social activities, and isolation. The issue of depression can pass through the families, but it can also occur in those who have no family history.

Brain and Nervous System

There are certain people who just face depression once the time in their life; there also are those who face it several times. The most dangerous or the most effective kind of depression is a major depressive disorder. Some psychologist also refers to it as clinical depression. The disease affects three major parts of the brain the prefrontal cortex, amygdala, and hippocampus. Memories and the production of hormones are affected by depression. Problems are created when depressive action convinces the body to release excessive cortisol, which makes the body imbalanced. Otherwise, brain cells are produced in the adult life of a healthy brain. People generally face memory problems in this kind of situation. The prefrontal cortex shrinking affects emotions, decision-making abilities, and in the formulation of memories.

Many researchers are of the view that cortisol plays a very important role in modifying the physical and chemical actions of the brain. There are a number of interventions that one can use to rehabilitate his depressive problems. The MAOIs monoamine oxidase inhibitors are helpful drugs for the individual to reduce symptoms of depressive depression. They increase the amount of dopamine in the activities of the brain (Daroff, 2015). The communication and interrelation of the brain cells also improve when these medications are used. Some treatments are implied to stop such communication for the relaxation of the brain. In the same way, neurotransmitters are also affected by depression.

Some people also adopt other ways to medicate their depression and to save their brains from the mild. They use quality fruits and increase engagement in groups, along with activities that help grow and repair brain cells. These sensible individuals are also focused on the avoidance of drugs and alcohol, which destroy those cells of the brain. They also sleep well and try to sleep like normal

individuals for the repair of the brain cells. Neuropsychiatric research has also concluded that depression reduces the production of brain cells. The psychologist claims that depression is the most common and most available disease in different states. Certain therapies, like electroconvulsive therapy, help pass the current between the cells and enhance communication. Similarly, psychotherapy can also help the brain of the depressive individual and strengthen it against the pressure and stress on the brain. The prefrontal cortex also became strong by applying psychotherapy.

Technology and Brain

Technology has highly influenced the working, studies, and research on the operations of the brain. Neuroimaging is the postmodern development that assesses the workings of the brain along with the ratio of depression. In the same way, before the advent of technological instruments, scientists mostly have to wait for an autopsy unless assessing the brain. They also have to look at the injuries of the brain, which are revealed through the behavior of the individual. However, at present, they get much from the three-dimensional images of the brain to explore the emotions, thoughts, and the assessment of the issues inside the brain. Clinicians have the privilege of unfolding effective interventions for depressive brains.

The psychologist has implied neuroimaging technology in order to find out those white Americans who possess certain prejudices (Moxon, 2015). In the amygdala scientist, know that people show differences and conclude that a structure is involved in emotional learning. Research by psychologists also includes positive emotions. They assess the functional images of those students, which look at their lovers and the pictures of acquaintances. When an individual has a thoughtful look at her lover or pictures, the two deep areas of the brain converse as part of the circuit, which reveals that active action is going on in the brain. Such activity also regularizes the neurotransmitter dopamine, which runs brain functions when someone accepts awards.

The crises and the influence of technology can reshape the interaction we have with each other. This alters what makes us relaxed and happy. The human brain is one of the most sensitive organs and is facing new kinds of threats from the postmodern technological world. The twenty-first century is making our brains with nano-chip technology chips, which might draw the line between living and nonliving bodies. Enhance the number of people applying Prozac for the reduction of their depression; they are also giving their children Ritalin to improve their concentration on their studies. Similarly, an electronic chip is developed by scientists to allow a paralyzed patient to move a robotic limb only by thinking about it. People do not have such kind of thoughts before that scientists will make them such clever entities through the rigorous development of technology.

Technology also helps specialists determine how the brain can develop during infancy and adulthood. They explore how mental functions create a problem for the behavior and the nervous system. Imaging tools are also used in the clinical setting, classrooms, and for the purpose of literary experts.

The experts of educational psychology have assessed the depression level among kindergarteners and explored the effects of depression on the reading and learning skills of children through the use of technology. In the same way, to help the clinical setting, functional imaging is resolving problems like posttraumatic disorder along with panic and stress disorders.

History of Depression

The problem of depression is always with humans, which consistently affects the performance and the behaviors of humankind. If we simplify the case of depression, it explores that people of less developed times have seen less than we, the people of the postmodern age. The initial term used for depression was melancholia. In Mesopotamian literature, the term existed, and people of the second B.C millennium have used the term to express depression. There were also certain physicians who had to intervene in the problem of depression. Some of them reveal that it is not physical but a health disease that has a relation to spiritual illness.

The Greeks and the Romans were also divided over the causes and the nature of the illness. They collectively assigned it as a mental and physical health problem. Later on, a historical writer, Herodotus, further explained the term by writing about a king who was attacked by evils, which forced the king to be mad (Pantazatos, 2017). Different civilizations have interpreted the term depression in different ways, like Egyptians, Chinese, and the Babylonians, who named the illness a demonic possession. One of the psychologists of Greek times, Hippocrates, described the trait and personality and suggested that depression is related to the imbalance of body fluids, which is called humor.

The times of the Renaissance look at the depression as the forward development and the regression. The killing of mentally ill persons, along with witch-hunts, was common and prevalent in European society. Some of the psychologists and specialists in European society raised their views according to the theories propounded by Hippocrates. They said that mental illness is due to the fact of natural causes. They also opined that witches are disturbed members of our society who need rehabilitation and treatment. Similarly, the enlightened period of the eighteenth century unfolds depression as an illness that cannot intervene, and those who are facing depression should be locked up. Most of the members of the nineteenth-century society with depression became homeless, and among those, some were sent to institutions.

In the twentieth century, the approach toward depression changed with the view that depression is caused by the unbalancing of neurotransmitters in the brain. In the sixty or seventeenth era of the twenty-first century, frequent use of manic depression came as a reference to mood disorder. The term distinguished from the previously held unipolar depression. Americans used the term major depressive disorder in the late seventy, which became part of the diagnostic criteria. It was also used for the knowledge of symptoms of depression. The development in diagnosing and treating depression changes according to the requirements of the time. The postmodern world, with a high

number of depressive people, is installing technological intervention programs to address the most common illness prevailing in society.

The psychologist and the researcher associated with the science of mind have offered a number of theories on depression in the mid-twentieth century. One of the psychologists, Elbert Ellis, propounded that the causes of depression are irrational “must” and “should”, which lead to the self-blame in times of adversity. Aaron Beck, another scientist in psychology, has developed that depression comes from negative feelings and thinking about anything, the future, or about someone (Staneva, 2015). Half of a century ago, the illness of depression was considered biological or a reaction to stressful happenings. The unitary or binary model was represented as the actual reflection of the syndrome. The former model of expressing depression by the concept of severity was the result of the psychobiological final pathway, while the latter model represents differences between the reactive and biological syndromes of depression.

Certain persistent empirical arguments are needed to tackle the problem of melancholia. Some are criticizing the expansion of the diagnosis linked with the development of antidepressants since the times of nineteen hundred fifty. The old idea and the concept of melancholia are still operating in the kinds of depressive moods. However, the new explanation of depression is also accepted. One of the psychologists and the writer, albeit, has published DSM-IV-TR with conflicting findings in the year two thousand. A group of United States psychologists have propounded a new term that is major depressive disorders, over the years of nineteen seventy.

Bio-psychology

The analysis of how our brain works and operates and the role of other neurotransmitters in influencing the feelings, behaviors, and actions of the individual is discussed in the science of biopsychology. There are a number of names and titles associated with the bio psyche. Physiological psychology, behavioral neuroscience, and psychobiology are some of the names often used to explain the term biopsychology. The psychologists under the study analyze how emotions and biological processes interact with the mind. The imbalances in the brain functions are considered by the psychologist with the link of neurotransmitters and other aspects like dopamine; norepinephrine is affected by depression. There is a problem in the assessment of effects on neurotransmitters that are functioning in a person’s brain and related mental activity.

People use medication like antidepressant medications that are normally implied to intervene in the problems of depression. The neurotransmitter serotonin is included in influencing many body functions and activities (Pinel, 2014). Those actions are sexual behavior, mood, aggression, and eating by a person. Those people have decreased production of serotonin by the neurons, there is an increased chance of attack of depression. Similarly, such production and a mood state can cause suicide by an individual. In the same way, dopamine, which is associated with neurotransmitters, is also linked to depression. The prefrontal cortex is widely linked to clinical depression. This area of the

brain is consistently involved in changing the behavior and mood of the person. After its damage, as seen by many, certain psychosocial changes emerge in the personality of the depressive person. Different methods are used to examine the damage of prefrontal cortex abnormalities in those personalities that have the problem of depression.

Different lobes perform their functions in different parts of the brain. These are mostly related to the process of emotions, motor skills, cognition, and sensation. The frontal lobe includes the functioning of language expression, higher levels of cognition, and motor skills. The occipital lobe is related to the interpretation of information and stimuli. Sensory tactile information like touch, pressure, and pain are performed through the parietal lobe. In the same way, the procession of the memories and the explanation of the sounds and information we generally hear are operated under the temporal lobe. The activation and the process of the frontal lobe are generally changing among those individuals facing the problems of depression.

Research Design

There are certain research designs implied for the assessment of the issues of depression. Qualitative research will be applied to answer the question related to depression. In order to understand the best possible diagnosis and barriers that hinder the intervention, this research design will serve as the most appropriate option. The study will analyze and interview the number of people associated with depression (Shalev, 2014). Experiences and the diagnosed individuals will be used as a cooperative staff for the assessment of new patients. Through the research design, the patient will receive treatment from the primary centers, which will benefit those who do not want to visit mental health hospitals.

The depressed people were interviewed, and the study will include the life chart interview along with the visits to the mental hospital, which can be implied for effective results. Polychotomous regression can imply examining the heterogeneity of the major depressive disorders. In the same way, the studies that are associated with the longitudinal style reveal that around sixty percent of depressive people remit in a year. In the follow-up research, fifty percent of patients with depression develop the illness in five years.

Those individuals who are referred to the clinics are less fair than those who intervene in the communities. Similarly, among the adults, few individuals have shown recovery in depressive moods. Most of them have reported residual impairment. In the life of adults, adolescent depression predicts a number of depressive disorders. These are anxiety, depression, suicide, and bipolar disorders. Unemployment and the problems associated with physical health are also associated with depressive disorders. Depression during the time of adolescence leads to chronic and relapsing disorders. Such kinds of disorders cause psychosocial issues and ill health problems.

Ethical Issues in Research Design

In the research design, there is always a need to flow with certain rules. Those ethical rules can enhance the productivity and values of mental health research. In modern research, there are numerous challenges for researchers as they have increased dependence on computers, software technologies, and the internet. The privacy of depressed individuals, along with confidentiality, is a challenge for modern researchers. The research in the behavioral, social sciences, and in psychology demands personal interaction along with the collection of information on the personality of the focused person. The breach in the collection of data will severely harm the researchers and its participants, and it will embarrass a person socially. The social and economic status of the person can also be harmed, and his job can be lost.

Privacy refers to the rights of depressed individuals, which include the limited access of other people in those aspects like thoughts, identification of the information and the information that contains mental tissues, and collection of produced cells. Privacy is not included in the constitution of the United States; however, professional physicians and researchers consider it a basic human right. The obligation to maintain confidentiality is one of the important points for researchers. The Council of International Medical Sciences and the World Health Organization have set certain privacy rules for the collection of information and for respecting the privacy of individuals involved in the research. In the same way, the issues of confidentiality will also influence the research design and quality of information collected from patients with depression (Harriss, 2015). The process of confidentiality includes the protection of one's privacy, and treatment of his/her data should be according to the particular rules for privacy. The keeping of personal information and data has more weight than sharing those data with other people or professionals.

Certain are advantages of maintaining the confidentiality of the information collected through interviews and personal interaction with patients with depression. Privacy will provide a healthy trust between the researcher and the participants involved in the particular research design. In addition to the intervention from the clinicians, participation in the research is essential. The person will have no worry about the information he provided to the researcher. Respect, honor, and the dignity of the individuals are also maintained through the implementation of efficient tools of privacy and confidentiality. The protection of individual data will also enhance autonomy and control. Ethics are required to maintain the overall mortality and the quality of the research.

The problem of approval of the specific research is also a big challenge for the research to maintain its reliability by focusing on the latest and most neglected issues. The ethical approval of depression-related research is an integral part of the research process. An institutional board comprises senior fellows and professionals who review the research in order to save the participants and the researcher. The expectations of the institutions or board from the person going to have research on the issue of mental health and depression are normal. They expect the researcher to provide sufficient and reliable information from the participants in order to make better and informed

decisions. There must not be any harm to the participant for non-involvement or for not giving certain information. Participants must be independent in deciding their inclusion or exclusion from the research at any time without having any prejudice. For anonymization and confidentiality, the data of the participants must be secured. The ethics committees or the board will expect the worth of research for beneficial effects in diagnosing and recovering patients with depression.

Influence of Stress in Developing Depression

The researcher has explored a number of factors in the development of depression. However, studies that include rats with humans have explored that stress is highly influencing the creation and promotion of depression. The stress decreases the abilities and the power of the brain in keeping itself healthy and stable. An important aspect of our brain influences our actions, memories, and learning abilities. Studies were also conducted on the brain tissues of rats to explore the physical changes that happened due to stress.

The comparison between the rats reveals that those rates with stressful minds produce fewer cells than those who are mentally stable and free from stress. The most important part affected by stress is the hippocampus, which is linked to the operations of short-term memories and related functions (Staneva, 2015). One of the researchers lamented that decreasing in the production of cells is caused primarily by depression. The hippocampus shrinks with depression, and a stable brain has the ability to produce and rebuild the tissues through the process of neurogenesis. Those people that are having stress often use antidepressant medicines, they can benefit but if they left the exercise of using regular medication there might be harmful effects on them (Swartz, 2015). Researchers have given a drink, which has reduced the serotonin level, which shows that depression is linked to the amount of serotonin in the brain of a person.

The connection between stress and depression is absolute. Chronic stress, which includes caring for patients with Alzheimer's or stress that involves the loss of a job or some close relative, leads to depression. The mechanism of the stress and response became overactive with both kinds of stress. Ant kind of loss is an important factor in enhancing depression; similarly, grieving is the best and healthy response to depression. However, if the grieving takes too long, it will severely affect the depression. Serious illness, including depression, is considered a chronic stressor. Not a single individual has escaped from the stress linked with events like natural disasters, the loss of a loved one, and a job. A layoff or an acute stressor might relate to chronic stress if the job time becomes too long.

Studies concluded that stress is one of the important aspects of depression in rats and humans. There are a number of physical changes that occur in those who are facing severe stress. A systematic and chemical process is applied by the researcher in order to find out the stains of young and fresh brain cells (Shalev, 2014). The process enables the participant to count the number of cells produced in the brains of the rats. The study enhances the experience of individuals and makes them more focused

on the finding for the elimination of stress, which badly affects the human brain and causes depression.

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