

FEELING THE BLUES

BY *KAPILAN KUGATHASAN*

Depression is a widespread illness that affects people regardless of age, nationality, race, and gender. Nearly everyone has feelings of blue moods at some point in their lives. It is when these feelings persist, recur, or become severe that one may be experiencing depression and should seek medical help. People with a depressive illness cannot merely "pull themselves together" and get better. Without treatment, symptoms can last for weeks, months, or years and it can be debilitating. Fortunately, today, there is a wide range of medications and therapies available to treat depression.

A complex interplay of factors involving genetics, stress, and changes in body and brain function are thought to play a role in the development of depression (Kaufman, 2001). One of the reasons that depression is so common is because the illness may develop for a variety of reasons. A recent study suggests that abnormalities of the hippocampus may play a role in the pathophysiology of depression (Posener et al, 2003). The exact causes of depression are still in question, but scientists have identified certain risk factors that could increase the likelihood of one becoming depressed. Family history of depression, stressful situations such as a death in the family or relationship troubles, dependence on alcohol or drugs, medical conditions such as diabetes or cancer, and other mental illnesses are all risk factors that could lead to depression.

Depression can take many forms. What differentiates these forms are the severity and duration of the symptoms. However, there often is not a clear distinction between these different types of depression, since they frequently share many of the same characteristics. The different types of depression can be classified as minor depression or dysthymia, major depression, and manic depression (bipolar disorder), and within each of these main categories there are several subtypes.

Major depression, sometimes called clinical depression, is the most common form of depression. It is characterized by a mood change that lasts more than two weeks and includes one or both primary signs of depression: overwhelming feelings of sadness or grief, and loss of interest or pleasure in usually enjoyable activities (Kaufman, 2001). People with major depression may also experience recurrent thoughts of death or suicide, feelings of worthlessness, impaired thinking or concentration, insomnia, feeling tired all the time, significant weight loss or gain. These symptoms may differ from person to person as well as from one depressive episode to the next. For example, some people may have insomnia and lose weight while depressed, whereas others may oversleep, overeat and gain weight (Madison Institute of Medicine). In addition, major depression can range from mild to severe, with varying intensity of symptoms. In extreme cases, people with severe depression may be unable to work or care for themselves. Although major depression is the most common form of depression, approximately 26 per cent of individuals with major depression also suffer from chronic minor depression or dysthymia (Harkness et al, 2002).

Dysthymia is a long-lasting form of mild depression characterized by a persistently gloomy outlook. Dysthymia generally lasts for at least two years and sometimes more than five years (Mayclinic.com). It usually isn't as disabling as major depression and periods of dysthymia may alternate with intervals of feeling normal. Signs and symptoms of dysthymia are like those of major depression but not as intense (Rapaport et al, 2002).

People with bipolar disorder, on the other hand, experience recurring cycles of depression and euphoria (mania). This illness isn't as common as major depression or dysthymia, but it has a strong genetic component. About 80 to 90 per cent of people who have bipolar disorder also have a relative with some form of depression. Bipolar disorder typically emerges in adolescence or young adulthood and continues to occur intermittently throughout life (National Institute of Mental Health). As with other forms of depression, it is critical to seek treatment for manic depression to prevent worsening illness and decrease the risk of suicide.

The effects of depression are far reaching. There is emerging evidence that depressed patients have a significant loss of cells in the prefrontal cortex, a brain area important in shifting mood from one state to the other (Gold and Charney, 2002). Depressed patients also have increased levels of cortisol and norepinephrine, which represents a highly adverse biochemical environment that could contribute to many different adverse outcomes, including increased body fat, insulin resistance, increased inflammation, enhanced blood coagulation, and decreased bone formation (Gold and Charney, 2002). In addition, depression heightens the risk of increased morbidity of other diseases such as coronary artery disease and osteoporosis. Indeed, emerging data have shown that treating depression in people who have experienced myocardial infarction increases their chances of a good medical outcome and survival. Thus, detection and treatment of depression in all ill persons is critical.

There are a number of approaches to treating depression. Just as the cause of depression may be related to complex interplay of many factors, finding the most effective treatment for depression maybe a complex process that takes time and experimenting. Presumed cause of the depression, the availability of various treatments, and the patient and clinician's preferences are all factors that determine the choice of treatment.

At present, antidepressant medications are the cornerstones of treating depression, especially depressions that are at least moderately severe (Manji, 2003). The brain uses neurotransmitters, chemicals used by nerve cells to communicate with one another. Depression is associated with disruption in the neurotransmitters, serotonin, norepinephrine, and dopamine levels in the brain. Research suggests that depressed people have lower amounts of one or more of these neurotransmitters in the synapse between nerve cells than do people who aren't depressed. Antidepressants such as cyclic antidepressants, selective serotonin reuptake inhibitors (SSRIs), monoamine oxidase inhibitors (MAOIs), and newer, more receptor-specific agents such as venlafaxine (Effexor) and mirtazapine (Remeron) all work by influencing the activity of these neurotransmitters.

Another commonly used treatment for depression is counseling or psychotherapy. There are many forms of psychotherapy, such as group therapy, interpersonal therapy (IPT), and cognitive behavior therapy (CBT), however, they all generally involve a mental health professional assisting the depressed person recover psychologically by talking, listening, dealing with thoughts and emotions, and changing behaviors. Exactly how psychotherapy works to improve depression isn't known.

In extreme cases of depression, antidepressants and psychotherapy aren't very effective. In these circumstances, electroconvulsive therapy (ECT) is used. In this therapy, precise amount electrical current is passed into one's brain, causing a brain seizure that lasts 30 to 60 seconds. It is not known for certain how ECT helps treat depression. It is known, though, that many chemical aspects of brain

functioning are altered during and after the seizure activity. This treatment works quickly than medication or psychotherapy, however, it can cause side effects such as memory impairment. The main benefit of this treatment is that it's often effective when other treatments aren't helpful. New treatments for depression are continually being researched, and currently treatments such as transcranial magnetic stimulation and vagal nerve stimulation are being investigated.

Depression is one of the most prevalent diseases in the world today. Thanks to improved medications and treatments, depression is

treatable. With appropriate treatment, approximately eight out of 10 people with depression will improve and can return to their normal lives. Unfortunately, too many people often don't seek treatments, either because they are unaware that they have depression, or because of misconceptions that depression isn't a real illness and admitting depression is a sign of weakness. It is crucial to treat depression as it can interfere significantly in one's physical and social functioning, and too often, untreated depression is associated with suicide. ■

AFTER THE STORM POLIO AND POST POLIO SYNDROME

BY ABHISHEK RAUT

It was not before 1916 that Polio first took center stage in international awareness. In that year, the first major US epidemic occurred. In New York City alone, the number of cases of Poliomyelitis were upwards of 9000 and resulted in 2400 deaths. Because the vast majority of those affected were under the age of five years, Polio was also known as Infantile Paralysis. During the 1930s, 1940s and 1950s, the Polio epidemics grew to unimaginable proportions. Almost 60 000 cases were reported during 1952 making it the largest epidemic year on record. On April 12, 1955, the nightmare was finally over. The Salk vaccine was deemed both safe and effective. Together, the Salk and Sabin vaccines made Polio almost completely disappear. But for those who faced the nightmare of Polio and survived, it seems that their troubles are still far from over.

The Stages of Polio

Previously, Polio had been divided into three distinct stages: acute illness, period of recovery, and stable disability. We now understand that there is one more stage which brings on a new set of symptoms related to the original Polio attack. This stage has various terms including Post-Polio Sequelae, Post-Polio Muscular Atrophy, Post-Polio Muscle Dysfunction, or Post-Polio Syndrome. Acute Illness (Stage 1) begins with a mild fever, headache, sore throat, diarrhea or vomiting, and malaise. To the majority of people affected, these symptoms will disappear after about three days. However, in a minority in the range of 5%, the virus invades the central nervous system resulting in high fever, stiff neck, severe headache, and muscle pains. The infection can spread even more producing muscle paralysis or weakness in the limbs, trunk, face and neck. Stage 2 is the recovery phase, and begins as soon as the patient's temperature returns to normal. Children take the longest time to recover with an average length of eight years. Stage 3 begins when the person reaches a plateau of maximum recovery. In this stage, the patient believes he/she has made a full recovery, and it really does seem this way considering that this stage usually lasts about 25 years. However, Stage 4 begins with an onset of new weaknesses, and is accompanied by fatigue, pain in muscles and joints, and decreased function. Pain in the joints and the muscles is also noted. Symptoms can include muscle atrophy, breathing and swallowing difficulties, and cold intolerance. Stage 4 begins on average about 33 years after the initial polio illness, and lasts for the entire life of the individual. Because these symptoms occur together, they are labeled

collectively as a syndrome. The table below shows the percentage of people with Post Polio Syndrome that are affected by the various symptoms.

Symptom (Range)	Percent
Fatigue	86-87
Muscle pain	71-86
Joint pain	71-79
Weakness in muscles	69-87
Cold intolerance	29-56
Atrophy	28-39

* Statistics from "Managing Post-Polio", Halstead.

Causes of Post Polio Syndrome

The word *poliomyelitis* comes from the Greek words *polios* (grey), and *myelos* (marrow) with the English word *itis* (inflammation). The poliovirus produces an inflammation of the gray marrow portion of the spinal cord. More specifically, it affects the motor nerve cells in the anterior horn of the spinal cord. This results in a variable amount of paralysis to the infected person. The virus is widely distributed and infects over 95 percent of the motor neurons in the spinal cord and other cells in the brain as well. After the infection, the affected cells either die or shed the virus and regain a near normal appearance. Since many of the neurons die, the ones that survive can develop additional terminal axon sprouts. This is done to reconnected nerves to muscle fibers which are disconnected from the rest of the body due to the death of their original motor neurons. This additional growth of axon sprouts is the body's way of keeping as many muscle cells in working condition as possible. This compensatory process allows a recovered motor neuron to adapt up to ten additional muscle fibres for every muscle cell stimulated originally. This means that a motor neuron that was designed to supply 1000 muscle fibres might take on the function of supplying as many as 10 000 fibers. The size of these motor units increase significantly after acute polio, and are known as 'giant motor units'. This makes it possible for a few motor neurons to do the work of many more. However, this process is a temporary solution at best. Any cell which is overworked to nine times its original function will malfunction at a much quicker rate than a normal