CHAPTER 2

MOOD DISORDERS

Highlights

- **Mood disorders include major depression, bipolar disorder (combining episodes of both mania and depression) and dysthymia.**
- **Approximately 8% of adults will experience major depression at some time in their lives. Approximately 1% will experience bipolar disorder.**
- **The onset of mood disorders usually occurs during adolescence.**
- **Worldwide, major depression is the leading cause of years lived with disability, and the fourth cause of disability-adjusted life years (DALYs).**
- **Mood disorders have a major economic impact through associated health care costs as well as lost work productivity.**
- **Most individuals with a mood disorder can be treated effectively in the community. Unfortunately, many individuals delay seeking treatment.**
- **Hospitalizations for mood disorders in general hospitals are approximately one and a half times higher among women than men.**
- **The wide disparity among age groups in hospitalization rates for depression in general hospitals has narrowed in recent years, because of a greater decrease in hospitalization rates in older age groups.**
- **Hospitalization rates for bipolar disorder in general hospitals are increasing among women and men between 15 and 24 years of age.**
- **Individuals with mood disorders are at high risk of suicide.**

What Are Mood Disorders?

Mood disorders may involve depression only (also referred to as "unipolar depression") or they may include manic episodes (as in bipolar disorder, which is classically known as "manic depressive illness"). Individuals with mood disorders suffer significant distress or impairment in social, occupational, educational or other important areas of functioning.

Individuals with depression feel worthless, sad and empty to the extent that these feelings impair effective functioning. They may also lose interest in their usual activities, experience a change in appetite, suffer from disturbed sleep or have decreased energy.

Individuals with mania are overly energetic and may do things that are out of character, such as spending very freely and acquiring debt, breaking the law or showing lack of judgement in sexual behaviour. These symptoms are severe and last for several weeks, interfering with relationships, social life, education and work. Some individuals may appear to function normally, but this requires markedly increased effort as time with the illness progresses.

Both depressive and manic episodes can change the way an individual thinks and behaves, and how his/her body functions.

Major depressive disorder is characterized by one or more major depressive episodes (at least 2 weeks of depressed mood or loss of interest in usual activities accompanied by at least four additional symptoms of depression).[1]

Bipolar disorder is characterized by at least one manic or mixed episode (mania and depression) with or without a history of major depression.[2]

Dysthymic disorder is essentially a chronically depressed mood that occurs for most of the day for more days than not over a period of at least two years,[1] without long, symptom-free periods. Symptom-free periods last no longer than 2 months. Adults with the disorder complain of feeling sad or depressed, while children may feel irritable. The required minimum duration of symptoms for diagnosis in children is 1 year.

Symptoms	
Depression	**Mania**
• **Feeling worthless, helpless or hopeless** • **Loss of interest or pleasure (including hobbies or sexual desire)** • **Change in appetite** • **Sleep disturbances** • **Decreased energy or fatigue (without significant physical exertion)** • **Sense of worthlessness or guilt** • **Poor concentration or difficulty making decisions**	• **Excessively high or elated mood** • **Unreasonable optimism or poor judgement** • **Hyperactivity or racing thoughts** • **Decreased sleep** • **Extremely short attention span** • **Rapid shifts to rage or sadness** • **Irritability**

How Common Are Mood Disorders?

As a group, mood disorders are one of the most common mental illnesses in the general population. Canadian studies looking at lifetime incidence of major depression found that 7.9% to 8.6% of adults over 18 years of age and living in the community met the criteria for a diagnosis of major depression at some time in their lives.[1] Other studies have reported that between 3% and 6% of adults will experience dysthymia during their lifetime,[3] and that between 0.6% and 1% of adults will have a manic episode during their lifetime.[4]

During any 12-month period, between 4% and 5% of the population will experience major depression.[1] According to the 1994/95 National Population Health Survey (NPHS), 6% of the Canadian population aged 12 years and over had symptoms consistent with depression at the time of the survey.[5]

Impact of Mood Disorders

Who Is Affected by Mood Disorders?

Mood disorders affect individuals of all ages, but usually appear in adolescence or young adulthood. However, late diagnosis is common: the average age of diagnosis of major depressive disorder is in the early twenties to early thirties.1

Studies have consistently documented higher rates of depression among women than among men: the female-to-male ratio averages 2:1.[3] Women are 2 to 3 times more likely than men to develop dysthymia.

Sex differences in the symptoms associated with depression may contribute to the differences in the prevalence of depression between men and women. For example, men are more likely to be irritable, angry and discouraged when depressed, whereas women express the more "classical" symptoms of feelings of worthlessness and helplessness, and persistent sad moods. As a result, depression may not be as easily recognized in a man. In addition, women are more likely than men to seek help from health professionals. Biological or social risk or protective factors may also differ between men and women.

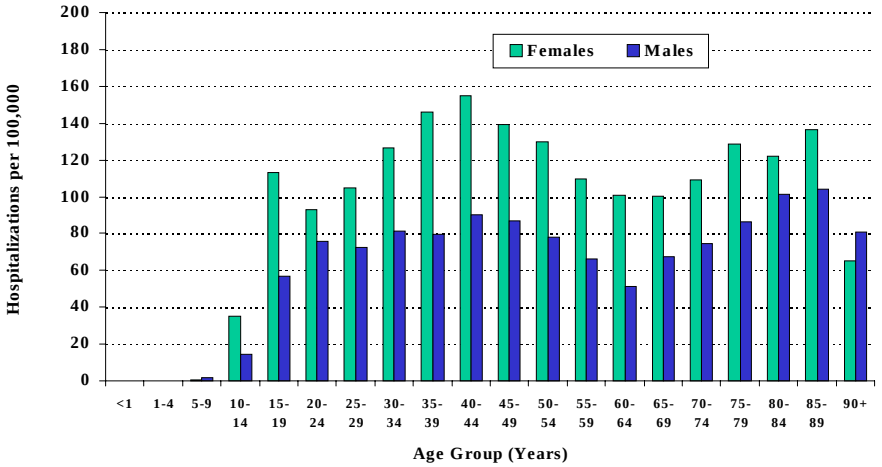
For bipolar disorder, it is generally accepted that the ratio between men and women is approximately equal.[6]

Ideally, data from a population survey would provide information on the age/sex distribution of individuals with mood disorders. Statistics Canada's Canadian Community Health Survey (CCHS) will provide this for 2002.

Although most individuals with mood disorders are treated in the community, hospitalization is sometimes necessary. At the present time, hospitalization data provide the best available, though limited, description of individuals with mood disorders. The results must be viewed with caution, however, since this is only a subset of those with mood disorders: most individuals with mood disorders are treated in the community rather than in hospitals, and many do not receive treatment at all.

In 1999, more women than men were hospitalized for major depressive disorder in every age group except 90+ years (Figure 2-1). Young women aged 15-19 years had much higher rates of hospitalization than the immediately adjacent age groups. Women between the ages of 40 and 44 years and men between the ages of 85 and 89 years had the highest rates of hospitalization for their sex.

Figure 2-1 Hospitalizations for major depressive disorder* in general hospitals per 100,000 by age group, Canada, 1999/2000

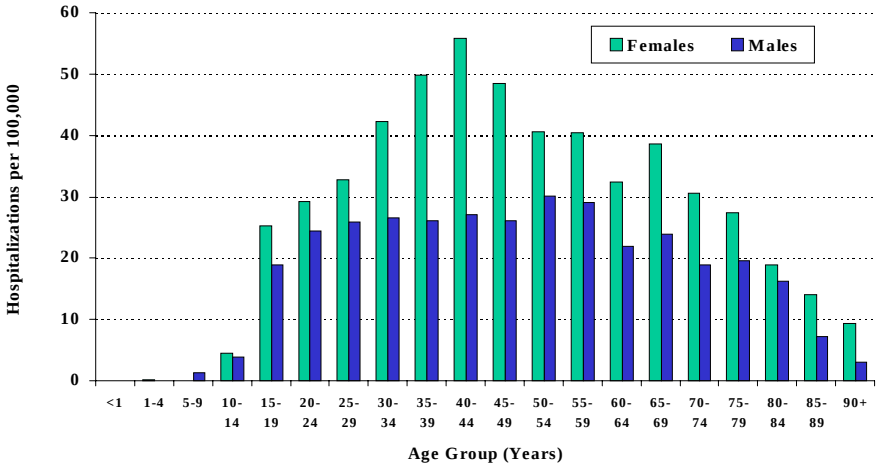


* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

In 1999, in all except the 5-9 year age group, women were hospitalized for bipolar disorder at significantly higher rates than men (Figure 2-2). This contrasts with the generally accepted equal ratio of prevalence of the disorder among men and women. Further research is needed to explain this distribution. Women were most frequently hospitalized for bipolar disorder between the ages of 40 and 44 years.

Figure 2-2 Hospitalizations for bipolar disorder* in general hospitals per 100,000 by age group, Canada, 1999/2000



* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

How Do Mood Disorders Affect People?

Because of their high prevalence, economic cost, risk of suicide and loss of quality of life, mood disorders present a serious public health concern in Canada. Depression and mania cause significant distress and impairment in social, occupational, educational or other important areas of functioning.[7] According to the World Health Organization (WHO), major depression is the fourth leading cause of disability adjusted life years (DALYs) in the world.[8] Major depression is the leading cause of years of life lived with disability (YLD) and bipolar is the sixth leading cause.[8]

Major depressive disorder is a recurrent illness with frequent episode relapses and recurrences. The more severe and long-lasting the symptoms in the initial episode, due in some cases to a delay in receiving effective treatment, the less likely is a full recovery.

Unipolar major depressive disorder is identified as the fourth-ranked cause of disability and premature death worldwide.[8] Depression also has a major impact on the mental health of family members and caregivers, often with an increased presence of depression and anxiety symptoms.

Dysthymia, as a result of its protracted nature, can be very debilitating.[9] In spite of a high recovery rate, the risk of relapse is significant. Individuals with this disorder are also at high risk of experiencing an episode of major depression.[10]

Individuals with one episode of **bipolar disorder** tend to experience future episodes. Recovery rates vary among individuals. Those with purely manic episodes fare better than those with both mania and depression, who tend to take longer to recover and have more chronic course of illness.[6]

The mortality rate among individuals with bipolar disorder is 2 to 3 times greater than that of the general population, and includes higher rates of suicide.[6]

Child or spousal abuse or other violent behaviours may occur during severe manic episodes. Furthermore, individuals with bipolar disorder often show loss of insight, resulting in resistance to treatment, financial difficulties, illegal activities and substance abuse. Other associated problems include occupational or educational failure, financial difficulties, substance abuse, illegal activities and divorce.[2] Individuals with bipolar disorder may often have difficulty maintaining steady employment and, as a result, may suffer social and economic disadvantages.

Mood disorders frequently accompany other mental illnesses, such as anxiety disorders, personality disorders, and substance abuse and dependencies. The presence of another mental illness increases the severity of the illness and results in a poorer prognosis. Individuals with mood disorders are at high risk of suicide.

Economic Impact

Because of their high prevalence, mood disorders have a major effect on the Canadian economy. This effect is dual in nature - first, with the associated loss of productivity in the workplace due to absenteeism and diminished effectiveness; and second, with the high health care costs attributable to primary care visits, hospitalizations and medication.

At the individual and family level, the loss of income and cost of medication create a strain on the family financial resources.

Stigma Associated with Mood Disorders

The stigma against individuals with mood disorders has a major influence in determining whether an individual seeks treatment, takes prescribed medication or attends counselling. This effect is greater among men than women. The stigma also influences the successful re-integration of the individual into the family and community.

Employers may be concerned that the individual with a mood disorder will be unable to function at the level of other employees. When the illness goes untreated, this may be true. However, with treatment to reduce or manage symptoms, performance usually improves. Reducing the stigmatization of mental illness in the workplace will be helped by increased knowledge and an employer's willingness and ability to respond appropriately to an employee's needs.[11] Enforcement of human rights legislation can reinforce voluntary efforts.

Causes of Mood Disorders

Mood disorders have no single cause, but several factors, such as a biochemical imbalance in the brain, psychological factors and socio-economic factors, tend to make some individuals prone to such disorders.[9,12]

Genetic Influence

Studies have established that individuals with depression and bipolar disorder often find a history of these disorders in immediate family members.[6,13] Evidence suggests that many different genes may act together and in combination with other factors to cause a mood disorder. Although some studies have suggested a few interesting genes or genomic regions, the exact genetic factors that are involved in mood disorders remain unknown.

Previous Episode of Depression

One episode of major depression is a strong predictor of future episodes. More than 50% of individuals who have an episode of major depression experience a recurrence.[13]

Stress

Stress has traditionally been viewed as a major risk factor for depression. Recent research efforts have indicated, however, that stress may predispose individuals only for an initial episode and not for recurring episodes.[14] Responses to stress differ greatly among individuals: some are more susceptible than others to depression following life events, when they are in difficult relationships, or because of socio-economic factors such as inadequate income or housing, prejudice and workplace stress.

Physical Illness

A strong association exists between various chronic medical conditions and an elevated prevalence of major depression.[15,16] Several conditions, such as stroke and heart disease, Parkinson's disease, epilepsy, arthritis, cancer, AIDS and chronic obstructive pulmonary disease (COPD), may contribute to depression. Several factors associated with physical illness may contribute to the onset or worsening of depression. These include the psychological impact of disability, decline in quality of life, and the loss of valued social roles and relationships. Medication side effects may also be a contributing factor. Finally, it is possible that the physical disease itself may contribute directly to the onset of depression by affecting physiological mechanisms such as neurotransmitters, hormones and the immune system; for similar reasons, episodes of mania may occur following physical illness or use of medications.

Indirect factors also influence the relationship between physical conditions and depression. Such factors include disability and quality of life of individuals with chronic disease and the tendency for some medications used for treating physical illnesses to cause depression.Treating chronic physical illness effectively requires vigilance for the early detection and treatment of depression.

Treatment of Mood Disorders

Mood disorders are treatable. Many people with a mood disorder fail to seek treatment, however, and suffer needlessly. Of those who seek treatment, many remain undiagnosed or receive either incorrect medication or inadequate doses.[17] The delay in seeking and receiving a diagnosis and treatment may be due to a number of factors, such as stigma, lack of knowledge, a lack of human resources and availability or accessibility of services. Current initiatives to relieve the burden of mood disorders include not only improved recognition and use of effective treatments, but also education for individuals and families and for the community. Primary care settings play a critical role in both recognizing and treating these illnesses. Innovative practice models have shown that effective interventions can decrease symptoms and increase work days.[18] Effective early treatment of mood disorders can improve outcomes and decrease the risk of suicide.

Antidepressant medications and education in combination with various forms of psychotherapy, such as cognitive-behavioural therapy, have demonstrated their effectiveness in treating depression. A recent publication from the Canadian Psychiatric Association outlines the clinical guidelines for the treatment of depressive disorders.[1]

Educating family and primary care providers is essential not only to ensure the recognition of early warning signs of depression, mania and suicide and to implement appropriate treatment, but also to ensure adherence to treatment in order to minimize future relapses. Sound support networks are crucial during both the acute phase of the illness and the post-illness adjustment to daily life.

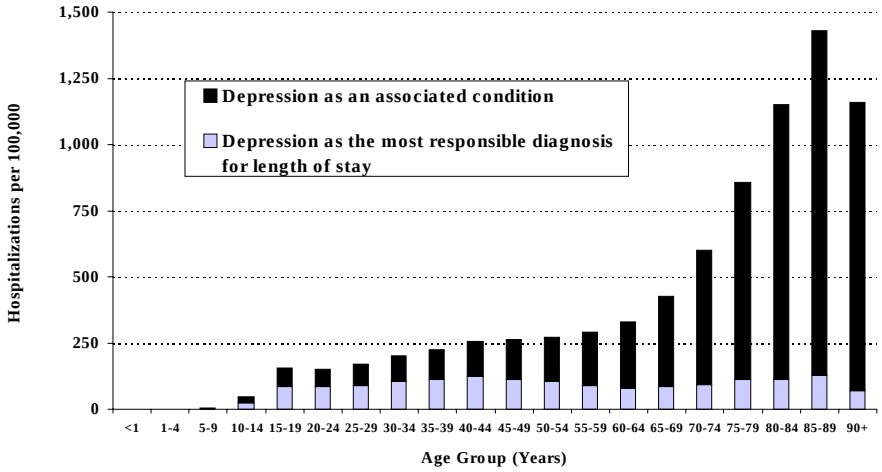
Major depression results in poor productivity and sick leave from the workplace. The workplace, therefore, is an important area for addressing mental health issues. Supporting the development of healthy work environments, educating employers and employees in the area of mental health issues, and providing supportive reintegration into the work environment for those experiencing mental illness would go a long way toward minimizing the effect of major depression on the workplace.

Individuals with mood disorders may require hospitalization to adjust medication, to stabilize the disorder or to ensure protection against self-destructive behaviour.

Major Depressive Disorder

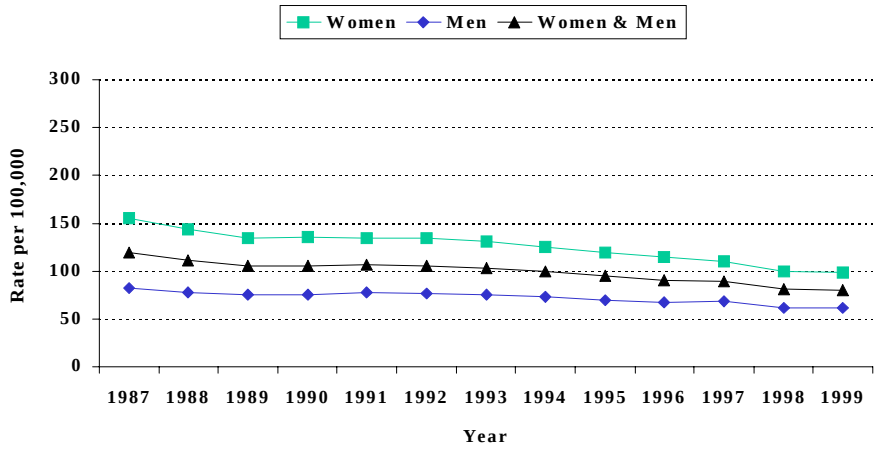
In 1999, among people under the age of 50 years with major depressive disorder who were hospitalized, the disorder was the main contributor to determining their length of stay (Figure 2-3). Among people with the disorder over the age of 50 years, depression was more likely to be an associated condition contributing to the length of stay. This is consistent with the association between physical illness and depression.

Figure 2-3 Hospitalizations for major depressive disorder in general hospitals per 100,000 by contribution to length of stay and age group, Canada, 1999/2000



Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Figure 2-4 Rates of hospitalization due to major depressive disorder* in general hospitals by sex, Canada, 1987/88-1999/2000 (age standardized to 1991 Canadian population)



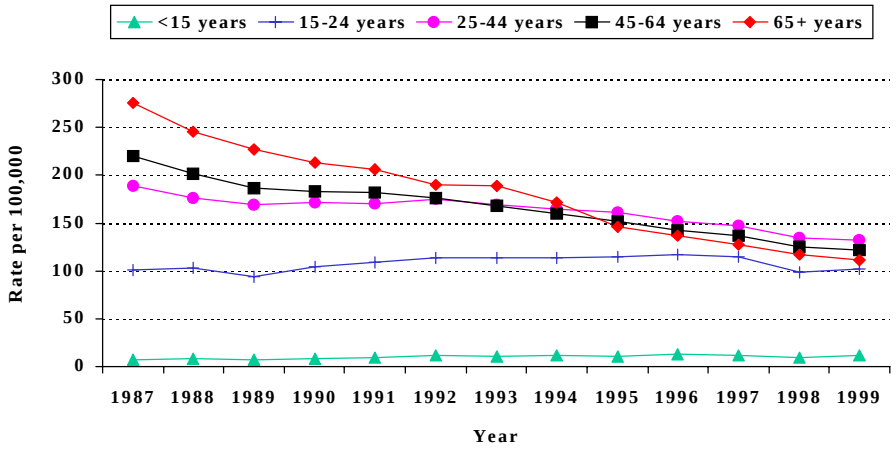
* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Overall, between 1987 and 1999, hospitalization rates for major depressive disorder decreased by 33% among both men and women (Figure 2-4).

Among women 25 years of age and over, rates of hospitalization due to major depressive disorder decreased between 1987 to 1997 while remaining fairly stable among women under the age of 25 years (Figure 2-5). Women over the age of 65 years showed the greatest rate of reduction.

Figure 2-5 Rates of hospitalization due to major depressive disorder* in general hospitals among women, Canada, 1987/88-1999/2000 (age standardized to 1991 Canadian population)



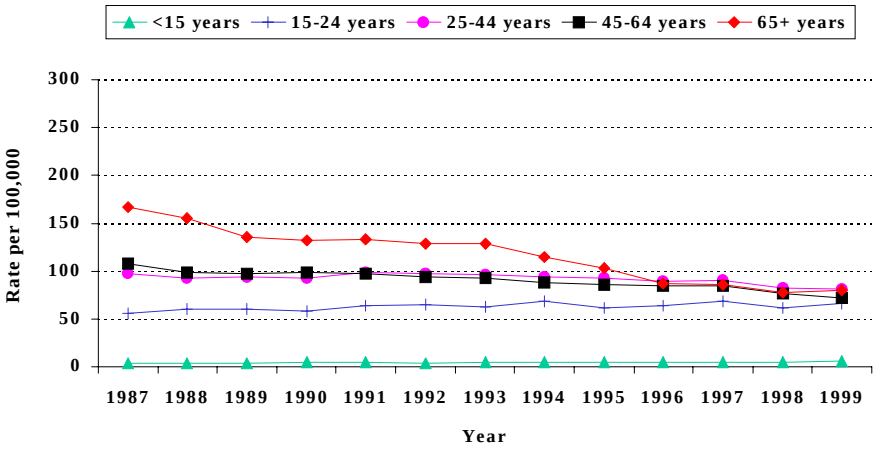
* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Among both men and women aged 15 years and over, the wide variations in hospitalization rates that were evident in 1987 had disappeared by 1999, mostly as a result of moderate decreases in the 25-64 year age groups and the large decrease among those aged 65 years and over.

Among men, hospitalization rates for major depressive disorder between 1987 and 1999 showed the greatest decrease in the 65+ age group (Figure 2-6). During this same time period, rates among young men aged between 15 and 24 years increased to a level similar to that of all older age groups.

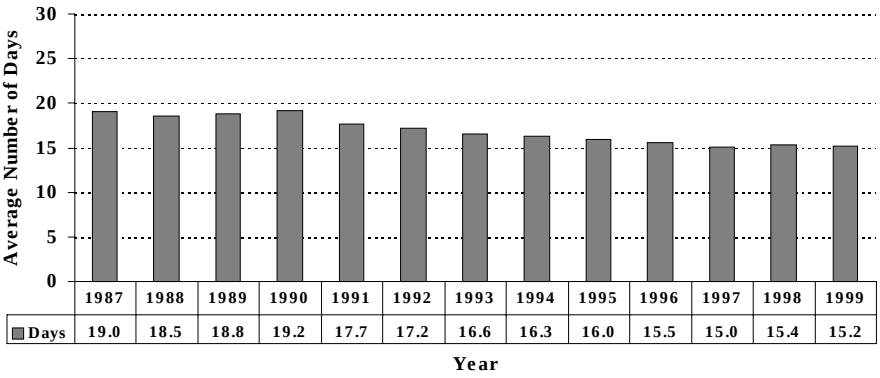
Figure 2-6 Rates of hospitalization due to major depressive disorder* in general hospitals among men, Canada, 1987/88-1999/2000 (age standardized to 1991 Canadian population)



* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Figure 2-7 Average length of stay in general hospitals due to major depressive disorder*, Canada, 1987/88-1999/2000



* Using most responsible diagnosis only

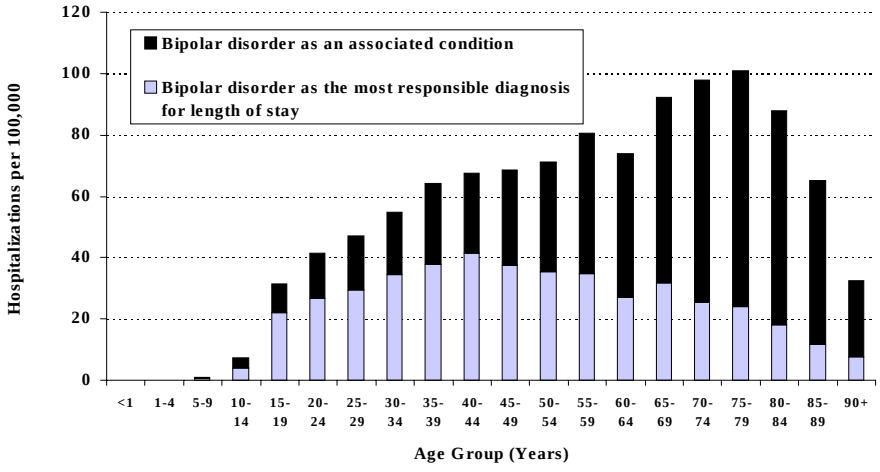
Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Between 1987 and 1999, the average length of stay in hospital in Canada due to major depressive disorder decreased by 20% (Figure 2-7).

Bipolar Disorder

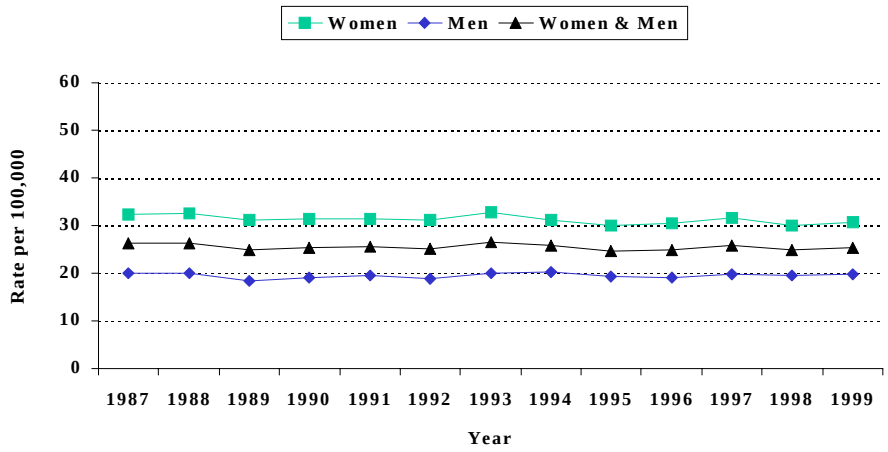
In 1999, bipolar disorder was the main contributor to the length of hospital stay among people with the disorder under the age of 50 years (Figure 2-8). Among older people, bipolar disorder was more likely to be an associated condition contributing to length of stay.

Figure 2-8 Hospitalizations for bipolar disorder in general hospitals per 100,000 by contribution to length of stay and age group, Canada, 1999/2000



Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Figure 2-9 Rates of hospitalization due to bipolar disorder* in general hospitals by sex, Canada, 1987/88-1999/2000 (age standardized to 1991 Canadian population)



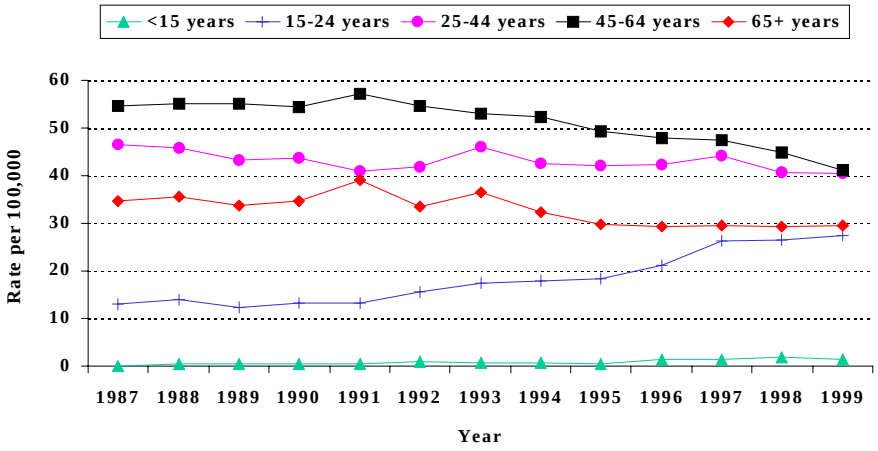
* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Overall, hospitalization rates for bipolar disorders remained fairly stable among both men and women between 1987 and 1999 (Figure 2-9).

Between 1987 and 1999, hospitalization rates for bipolar disorder among women under the age of 25 years more than doubled (Figure 2-10). During the same period, rates in the older age groups decreased.

Figure 2-10 Rates of hospitalization due to bipolar disorder* in general hospitals among women, Canada, 1987/88-1999/2000 (age standardized to 1991 Canadian population)

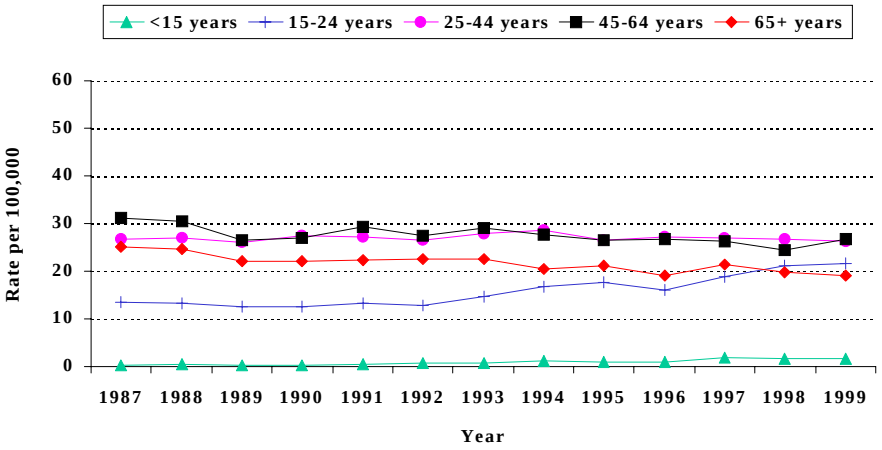


* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Between 1987 and 1999, hospitalization rates for bipolar disorder among men aged 15-24 increased by 61%. Rates among men aged 25-44 years remained stable (Figure 2-11). Rates decreased by 14% among men aged 45-64 years, and by 23% among men aged 65 years and over.

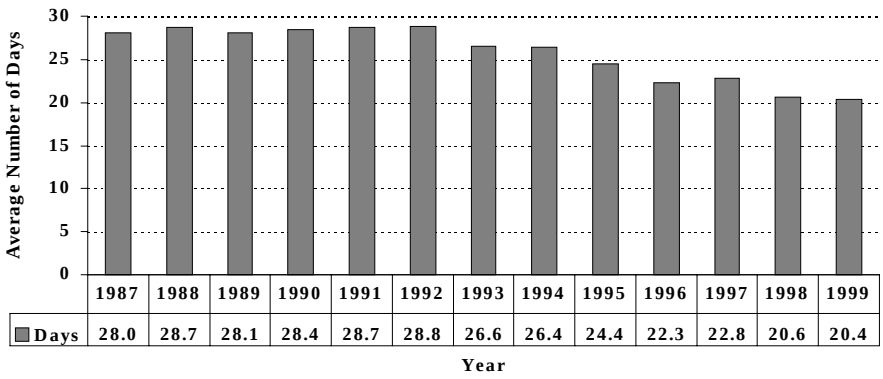
Figure 2-11 Rates of hospitalization due to bipolar disorder* in general hospitals among men, Canada, 1987/88-1999/2000 (age standardized to 1991 Canadian population)



* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Figure 2-12 Average length of stay in general hospitals due to bipolar disorder*, Canada, 1987/88-1999/2000



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Days	28.0	28.7	28.1	28.4	28.7	28.8	26.6	26.4	24.4	22.3	22.8	20.6	20.4

* Using most responsible diagnosis only

Source: Centre for Chronic Disease Prevention and Control, Health Canada using data from Hospital Morbidity File, Canadian Institute for Health Information

Between 1987 and 1999, the average length of stay in general hospital due to bipolar disorder decreased by 27% (Figure 2-12).

Discussion of Hospitalization Data

The higher hospitalization rates for depression among women than men support the clinical experience of higher rates of depression among women. Based on clinical research, rates of major depression among women are 2 times higher than among men. On the other hand, the hospitalization rates among women are only about 1.5 times higher than among men, suggesting that men may be hospitalized for major depression at higher rates than women. This requires further research for confirmation and explanation.

Rates of bipolar disorder have been estimated to be equal among men and women. However, hospitalization rates for women with the disorder are much higher than men. Further research is required to assess if, in fact, rates of the disease are higher among women, or if women with the disorder are hospitalized at a higher rate than men, why this occurs.

Hospitalization rates for both depression and bipolar disorder among women peak between the ages of 35-49 years. Research is required to assess the factors in women's lives that contribute to this phenomenon.

Since 1987, hospitalization rates for depression among older Canadians have decreased much more than rates among younger age groups. Further research is required to determine the reasons for this trend. Has it been the result of better clinical treatment, and have outcomes for this age group also improved over this time period?

Hospitalization rates for bipolar disorder among young women and men have increased since the early 1990s. Does this signify an increase in bipolar disorder in these age groups, earlier recognition of the disorder, or a change in treatment?

Future Surveillance Needs

Mood disorders, including major depression, bipolar disorder and dysthymia are common and contribute to major personal and family distress. They also have a significant impact on workplace and health care costs.

Existing data provide a very limited profile of mood disorders in Canada. The available hospitalization data needs to be complemented with additional data to fully monitor these disorders in Canada. Priority data needs include:

- Incidence and prevalence of major depression, bipolar disorder and dysthymia by age, sex and other key variables (for example, socio-economic status, education, and ethnicity).
- Prevalence of depression in people with chronic physical illness.
- Impact of mood disorders on the quality of life of the individual and family.
- Access to and use of primary and specialist health care services.
- Treatment outcomes.
- Rates of suicide among individuals with mood disorders.
- Access to and use of public and private mental health services.
- Access and use of mental health services in other systems, such as schools, criminal justice programs and facilities, and employee assistance programs.
- Impact of mood disorders on the workplace and the economy.
- Stigma associated with mood disorders.
- Exposure to known or suspected risk and protective factors.

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