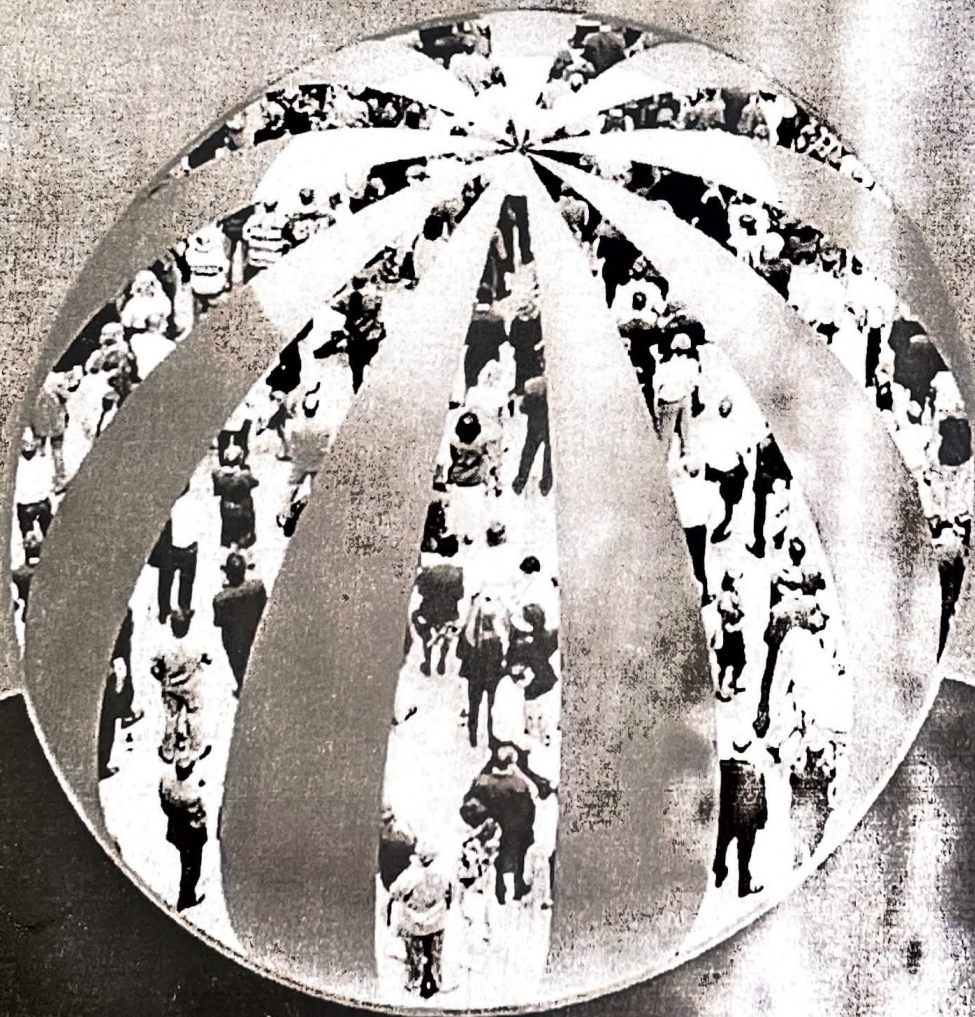


MENTAL AND NEUROLOGICAL  
**PUBLIC HEALTH**

A GLOBAL PERSPECTIVE



EDITED BY  
VIKRAM PATEL, ALISTAIR WOODWARD,  
VALERY L. FEIGIN, H.K. HEGGENHOUTEN,  
AND STELLA QUAH



## Mental Health: Morbidity and Impact

O Gureje and B Oladeji, University of Ibadan, Ibadan, Nigeria

© 2008 Elsevier Inc. All rights reserved.

### Burden of Mental Disorders

The World Health Organization estimates that up to 450 million people are affected by mental, neurological and behavioral disorders worldwide. These disorders include unipolar depression, bipolar affective disorder, schizophrenia, alcohol and drug use disorders, posttraumatic disorder, panic disorder, Alzheimer's disease and other dementias, and primary insomnia. The prevalence of mental disorders is generally higher than that of any other class of chronic conditions, and this is further reflected in the fact that four out of the six leading causes of years lived with disability are neurological or mental disorders. Even though estimates vary, depending on definition and ascertainment methods, in general approximately one in every four individuals will develop one or more mental disorders in their lifetime. Cross-national estimates of 12-month prevalence of between 4.3% and 26.4% have been reported in studies conducted among large community samples. In the community, the most common disorders are anxiety, mood, and substance use disorders. The burden attributable to mental disorders results not only from their high prevalence but also from the relatively early age of their onset as well as their tendency to be chronic or recurrent. For example, the median age of onset for anxiety disorders is early teenage and many affected individuals will go on to develop other types of mental disorder in adulthood.

### Prevalence

Mental disorders are highly prevalent in the community. Large-scale community surveys, which have only become possible with the development in the last few decades of reliable lay-administered interviews, have shown that between 25% and 50% of adults will develop one mental disorder or the other in their lifetime. In a 12-month period, between one in ten and one in five adults will have significant levels of symptoms sufficient for a categorical diagnosis. Even though such estimates have generated controversy and concern about their reliability, their replication in several different settings has provided credibility. These estimates have varied depending on the mode of ascertainment, the diagnostic categories covered, and the age group studied. There is also variability between countries. For example, the largest mental health survey ever conducted, the World Mental Health Surveys,

reported rates of 12-month disorder that vary between 4.7% in Nigeria and 26.3% in the United States (Table 1). Whether this reflects the performance of the assessment tools, the reporting styles of people from different cultural backgrounds, or a true difference in propensity to develop mental disorders is still unknown. The likelihood is that some or all of these factors are involved. Irrespective of where they are conducted, it is a common observation that prevalence rates in the general adult population typically underestimate projected lifetime risk, so that more people are indeed likely to develop mental disorders in their lifetime than cross-sectional estimates suggest.

The most common group of mental disorders in the community is anxiety disorders. Lifetime estimates of anxiety disorders of up to 25% have been commonly reported. Among these, specific phobia is the most prevalent often followed by social phobia, posttraumatic disorder, and generalized anxiety disorder. Mood disorders, in particular major depressive disorder, are also highly prevalent, with some studies suggesting that up to one in five adults may experience at least one episode of depression in their lifetime. Substance use disorders may affect up to 10% of adults in their lifetime, with alcohol abuse the most prevalent condition reported. While anxiety and mood disorders tend to be more prevalent among females, males are commonly the more likely to report substance use disorders. Rates of substance use disorders, as a group, tend to vary considerably between cultural settings and age groups. However, there is now a common observation for a trend for a prominent cohort effect in which higher rates of these disorders are often to be found in the teens and young adults.

Nonaffective psychotic disorders and dementia are less common in the community. Schizophrenia has a lifetime risk of about 1%. There is evidence that males are more affected than females, with a male to female ratio of about 1.4, and that migrants, especially second-generation migrants, tend to have higher incidence than native-born individuals. Bipolar disorder also has a lifetime morbid risk of about 1%. However, recent studies suggest that sub-threshold bipolar syndrome, which is also a disabling disorder, has a much higher prevalence in the community. In addition, several studies have now documented idiosyncratic experience of psychotic symptoms in the community, although the import for such experiences in regard to disability is not yet fully understood. About 1% of persons aged 65 years will have dementia. However, with the prevalence of the disorder doubling every 5 years, over 40% of elderly persons 90 years and above will have the disorder.

**Table 1** Epidemiologic studies: Lifetime and 12-month rates of mental disorder

	US (NCS-R)	Europe (ESEMeD)	New Zealand (NZMHS)	Mexico (M-NCS)	Nigeria (NSMHWB)
Lifetime prevalence	46.4	25.0	39.5	26.1	12.0
12-month prevalence	26.3	9.6	20.7	12.2	4.7

NCS-R, National Comorbidity Survey-Reproduction; ESEMeD, European Study of the Epidemiology of Mental Disorders; NZMHS, New Zealand Mental Health Survey; M-NCS, Mexican National Comorbidity Survey; NSMHWB, Nigerian Survey of Mental Health and Well-Being.

## Comorbidity

Mental disorders do not always occur in discrete forms. Many affected individuals will have more than one form of disorder, a phenomenon termed comorbidity. Defined as the presence, either simultaneously or in succession, of two or more specific disorders in an individual within a specified period of time, comorbidity has important implications for the level of impairment associated with mental disorders and for their prognosis. Persons with multiple disorders are commonly more disabled than those with single disorders but, in general, the implications of lifetime and 12-month comorbidity are somewhat different. Lifetime comorbidity rates can offer important opportunities for secondary prevention of mental disorders, as it has been shown that the experience of early-onset disorders confers a greater risk for the occurrence of another later-onset disorder; these later-onset disorders are frequently more persistent and severe. Twelve-month comorbidity, on the other hand, is often associated with symptom severity, with consequent increased burden on affected persons and increased demand for services. High rates of comorbidity have been reported in large community surveys. The Epidemiological Catchment Area study (ECA) and the National Comorbidity Survey in the United States reported 54% and 56%, respectively, of respondents with a lifetime history of at least one DSM III disorder met criteria for some other mental disorder. The Netherlands Mental Health Survey and Incidence study documented a 45% comorbidity rate, while the Australian National Mental Health Survey reported a 12-month comorbidity rate of 39%.

The most common comorbidity is between mood and anxiety disorders. More than 50% of patients with a mood disorder will meet diagnostic criteria for an anxiety disorder. Other conditions that may be comorbid with mood disorders include alcohol use disorders, personality disorders, dysthymia, somatoform disorders, drug abuse, and dependence and impulse control disorders. A substantial proportion of patients with schizophrenia have symptoms of obsessive-compulsive disorder (OCD) and schizophrenia patients with OCD may differ from those without OCD in severity of schizophrenia symptoms. Comorbidity also is common between mental disorders and substance-use disorders. Up to two-thirds of patients

attending alcohol and drug services have a comorbid mental disorder. Rates of alcohol-related problems are also high in patients attending mental health services.

The presence of multiple co-occurring disorders carries poor outcome. Comorbidity is associated with increased case severity, lower satisfaction with life, greater disability, longer illness course, and increased likelihood of attempting suicide. Furthermore, even though comorbidity increases the chance of seeking treatment and increases the chance of detection by primary care clinicians, it often complicates treatment and leads to poor response to treatment. In patients with major depressive disorders, comorbidity predicts longer duration of episode, recurrence of symptoms, and psychosocial impairment.

## Child and Adolescent Mental Health

Two reasons make a consideration of child and adolescent mental health particularly important. Many mental disorders start during this period of life and childhood disorders often predict chronicity of adult disorders. A consequence of these factors is that the large percentage of the global burden of disease can be attributed to neuropsychiatric conditions in children and adolescents (World Health Organization, 2001). Indications are that about 10–20% of children and adolescents worldwide suffer from a serious mental illness.

Childhood psychiatric disorders can broadly be categorized into disorders that more typically affect children and adolescents and disorders that are more common in adulthood but with onset in childhood. Childhood and adolescent disorders include specific or pervasive developmental impairment or delay and behavioral disorders, such as attention deficit hyperactivity disorder (ADHD), conduct disorder, and emotional disorders.

Approximately 50% of adult mental disorders begin in childhood, with many starting before the age of 14 years. Anxiety and impulse control disorders often start in the early teens. The prevalence of major depressive disorder in preadolescent children may be up to 2%, with over a doubling of the rate occurring at the onset of puberty in adolescence. Major depressive disorder in adolescence is associated with a fourfold increased risk of depression in adulthood.

There is a high level of comorbidity in childhood and adolescent mental disorders. Depressed children and adolescents have higher rates of anxiety disorders, oppositional disorders, and ADHD. Childhood bipolar disorder is associated with high rates of alcohol and drug use, ADHD, and disruptive disorders. More than 50% of children with ADHD may have comorbid psychiatric disorders, with the most common conditions being oppositional defiant disorder, conduct disorder, and depression and anxiety disorders.

A diverse range of negative consequence is associated with childhood and adolescent mental disorders. Adolescents with anxiety disorders are at elevated risk for illicit drug dependence and failure to attend university. The presence of major depressive disorder (MDD) is related to poor outcome, high rates of suicide and suicide attempts, psychosocial impairments, and lower educational achievement. Conduct disorder tends to persist into adolescence and adulthood and is associated with juvenile delinquency, high school drop out rates, adult crime, antisocial behavior, unemployment, marital problems, poor parenting, and poor physical health. Suicide is the third leading cause of death in adolescents worldwide (World Health Organization, 2001). Depression and substance abuse are risk factors for adolescent suicidal behavior.

Child and adolescent mental disorders impose considerable costs on society. Direct medical costs may result from increased health-care utilization. For example, children with ADHD, depression, and conduct disorder are more likely to present with somatic complaints and have higher health-care utilization than children without such disorders. However, it has been estimated that the health sector cost resulting from child and adolescent mental health problems may be no more than 10% of the total costs to the society. More costs are incurred in the provision of foster and residential care and in the criminal, educational, and social welfare sectors.

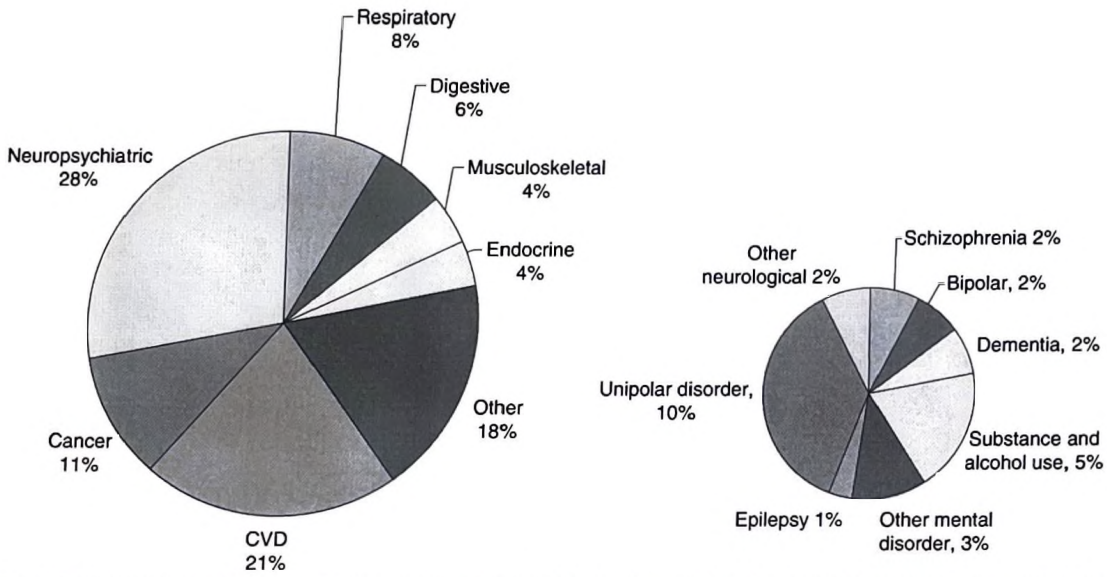
## **Disability and Functional Limitation**

Various concepts are still commonly employed in interchangeable and overlapping ways in the investigation of the impact of mental disorders on individuals. Thus, impairment, handicap, disability, and even quality of life and wellbeing are often used as if they denote similar sequelae of diseases. One example of the relative lack of specificity of current literature in the area is the diverse use to which common assessment tools in the field have been put. For example, the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36), has been used to assess activity limitation, disability, functional impairment, as well as quality of life. Recently, a heuristic organization of the consequences of disease has been provided by the World Health Organization in the International Classification of

Impairment, Disabilities and Handicaps (ICIDH-2). The ICIDH-2 organizes the consequences of disease into three dimensions: (1) body functions and structure (symptoms and impairment), (2) activities, and (3) participation. This organization has yet to form the conceptual basis of existing research into the impact of mental disorders. Along with the World Health Organization Disability Assessment Scale second edition (WHO-DAS-II), which is conceptually linked to it, the ICIDH-2 will hopefully guide future work in this area.

An important metric that allows comparison of the societal impact of various health conditions was introduced in 1993 by the Harvard School of Public Health in collaboration with the World Bank and the World Health Organization. The metric, disability-adjusted life years (DALY), combines information on the impact of premature death and of disability and other nonfatal health outcomes. As described by the WHO (2001), DALY represents the sum of years of life lost due to premature mortality (YLL) in the population and the years lost due to disability for incident cases of the health condition. Using this metric, mental and neurological disorders have been shown to be among the most disabling health conditions. Cumulatively, these disorders accounted for 12.3% of the total DALYs lost due to all diseases and injuries in 2000. In 2005, neuropsychiatric disorders accounted for approximately 28% of total DALYs lost due to noncommunicable diseases (Figure 1).

One of the reasons why mental disorders rank so high among the most burdensome diseases in the world is that they are commonly associated with a significant degree of disability or inability to perform usual activities or roles. Disability refers to limitations in performing defined roles and tasks in the context of the individual's social and cultural environment. Thus, disability can be conceived as inability to fulfill socially or culturally sanctioned expectations within the domains of family, work, recreation, and self-care. Multiple domains of functioning may be affected. For example, focus is commonly directed at the impairment of occupational and physical functioning as well as at disability days. However, within the concept of psychosocial disability, functions relating to marriage, parenting, and social relationships are often studied. In recent years, studies have been extended to encompass disability in activities of daily living as well as instrumental activities of daily living. Thus, mental disorder may limit performance relating to mobility as well as cognition and may also reduce the capacity of affected individuals for personal self-care. The demonstration that mental disorders may affect not only psychosocial functioning, but also limit physical functioning has important implications for the understanding of the totality of the impact of mental disorders, especially in contrasting such disorders with common chronic physical conditions such as arthritis, heart diseases, and respiratory conditions. Using the Sheehan Disability Scale, a measure of functional



**Figure 1** Disability adjusted life years (DALYs) due to non-communicable diseases in 2005; contributions of disease groups and of specific neuropsychiatric disorders. Adapted from Murray CJL and Lopez AD (1996) *The Global Burden of Disease Volume 1: A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020*. Cambridge, MA: Harvard University Press.

**Table 2** Treatment and disability of 12-month cases of physical and mental disorders in developed and developing countries according to the World Mental Health Surveys

	<i>Proportion treated</i>		<i>Proportion rated severely disabled<sup>a</sup></i>	
	<i>Developed (%)</i>	<i>Developing (%)</i>	<i>Developed (%)</i>	<i>Developing (%)</i>
<b>Physical</b>				
Arthritis	50.9	46.6	23.3	22.8
Cancer	51.8	59.6	16.6	23.9
Diabetes	94.4	76.6	13.6	23.7
High blood pressure	90.2	69.8	5.3	23.8
<b>Mental</b>				
Bipolar	29.1	13.4	68.3	52.1
Depression	29.3	8.1	65.8	52.0
Generalized anxiety disorder	31.6	7.2	56.3	42.0
Posttraumatic stress disorder	29.5	8.1	54.8	41.2

<sup>a</sup>Based on global ratings on the Sheehan Disability Scale. Adapted from Ormel J, Petukhova M, Chatterji S, *et al.* (in press). Disability and treatment of specific mental and physical disorders across the world: Results from the WHO World Mental Health Surveys. *British Journal of Psychiatry*.

impairment in the domains of work, home management, social life, and close relationships, data from the World Mental Health Surveys show that common mental disorders are more disabling than common chronic medical conditions, but, paradoxically, persons with mental disorders are much less likely to receive treatment (Table 2). The observations are true for both developed and developing countries, even though, as could be expected, cases of either physical or mental disorders are less likely to receive treatment if they reside in developing as compared to developed countries.

Schizophrenia and schizoaffective disorder constitute the fifth leading cause of disability and are responsible for more years of life lived with disability than all malignancies and HIV combined. Because the typical age of onset of schizophrenia is late adolescence or early adulthood, the illness often makes the achievement of a career or the establishment of a marital relationship impossible. The disability associated with schizophrenia often persists for the person's lifetime, with attendant cost to society in lost productivity. Persons with bipolar disorder also experience a significant level of disability

and there is evidence that, even though the disorder is characterized by remissions and relapses, associated disability may persist even during periods of apparent remission.

Even though psychotic disorders are seriously disabling, they are not the only group of mental disorders with evidence of associated disability and functional impairment. Persons with common mental disorders also show significantly elevated levels of disability when compared with persons with no mental disorders. Also, common mental disorders are associated with levels of disability that are comparable or higher than those of chronic physical disorders such as arthritis and heart disease. A large body of evidence suggests that unipolar major depressive disorder is commonly associated with significant psychosocial disability. The Global Burden of Disease study found that depression was the fourth most burdensome of all medical conditions throughout the world in 1990, and predicted that it would become the second most burdensome by 2020. Unipolar depressive disorder accounts for so much disability globally because it is common, with a lifetime occurrence in the general population reaching nearly one in five, and often follows a chronic course. It is now known that even states of subthreshold depressive symptoms that do not attain diagnostic status are associated with considerable levels of disability and that significant increases in disability occur with each stepwise increment in depressive symptoms.

The evidence of significant level of disability in persons with other common mental disorders is now substantial. The widespread co-occurrence of common mental disorders often confounds the link between specific disorders and functional limitation. For example, comorbidity of anxiety disorders with depression may hide the unique contribution of the former to disability. However, several studies have now documented the association of individual mental disorders with disability both in primary care settings and in the community. Even though persons with comorbid generalized anxiety disorder (GAD) and depression are often more disabled than those with GAD or depression alone, it is now known that GAD is independently associated with significant disability. Analysis of large community surveys shows that persons with either GAD or major depression have comparable levels of impairment. Compared with persons without mental disorders, persons suffering from phobia report significantly poorer social, family, and work functioning. Panic disorder, posttraumatic stress disorder, as well as agoraphobia each make a specific and unique contribution to disability. When multiple disorders are examined, level of disability varies substantially with diagnosis, with particularly prominent levels of disability among individuals with affective disorder, panic disorder, posttraumatic stress disorder, and generalized anxiety disorder.

### **Determinants and Course of Disability in Mental Disorder**

Longitudinal studies suggest that depression and disability often show synchrony of change, such that the remission of depression is associated with decrement in disability, while a worsening of depression is commonly accompanied by greater disability. However, symptomatic recovery does not always guarantee complete return to full functional capacity. Thus, even though there could be alleviation of disability when depressed patients become asymptomatic, there may continue to be persistence of disability even when full symptomatic remission has occurred. The question of whether psychopathology may cause residual debilitating functional impairment has important ramifications for rehabilitation and organization of postrecovery management of cases. As discussed by Ormel and colleagues (2004), postmorbid disability could be (1) the continuation of premorbid disability, predating the onset of any depressive episode (trait effect); (2) caused by ongoing postmorbid residual depressive symptoms (state effect); and (3) disability that emerged in the context of a depressive illness but has persisted in spite of the complete remission of the depression (scar effect). Their longitudinal study of a Dutch community cohort suggests that psychosocial disability in persons who have recovered from depression commonly reflects premorbid psychosocial disability and that scarring does not occur routinely in major depressive episodes. However, they also found the possibility of scarring in persons with severe recurrent major depression, an observation that may partly explain the apparent discordance of their findings from those of previous authors who have found evidence of scarring following mania and depression.

The emergence and persistence of disability in major depression may result from a variety of causes. Other than the severity of the depression, histories of previous episodes and of incomplete remission from them are important determinants of disability. Duration is often an important correlate of disability. However, it would seem that duration of depression may have a differential relationship with various aspects of disability, with impact on functioning in daily activities and none on social functioning. Also important are the presence of comorbidity of psychiatric disorders, personality traits of neuroticism, and perceived social support.

Even though most mental disorders are seriously disabling, the presence of disability does not always lead to seeking help. In some studies in the community, only about half of persons with mental illness who were rated as being disabled would have consulted a health provider. Persons who do not consult for medical intervention may feel that they do not need treatment. However, a finding that the presence of disability in the context of mental

disorder does not lead to seeking help is curious and may result from perceived stigma or lack of knowledge of the availability of appropriate treatment on the part of affected individuals. Nevertheless, when affected persons do seek help, there is evidence that the presence of concomitant disability sensitizes the primary care physicians to the presence of psychological problems and thus aids detection and treatment.

### Quality of Life

The term quality of life in the health-care field has become useful in integrating the patient's subjective experience of their life during illness into clinical care. This is done by relying on patient's subjective assessment of their quality of life. The importance of quality of life as an index of impact of mental illness lies in the need to capture indices of social and economic well-being and address the salience to those suffering from mental disorders of features such as autonomy, choice, life satisfaction, and self-actualization. Quality of life has become a valued assessment in those branches of medicine dealing with chronic suffering and disability. In mental health, it takes on an added importance: It embodies the regard accorded to patients as people with needs and concerns and not just as persons with illness. The assessment of quality of life in persons with mental illness is not without controversy (Katschnig *et al.*, 2006). Several dimensions of quality of life overlap considerably with psychopathological domains, thus raising the question about measurement redundancy. Also, there is some debate as to the validity of self-reported outcomes in the assessment of quality of life of persons with mental illness. This debate relates to the dissonance that may be observed between patients' subjective report and an objective evaluation of their position in life. In spite of these considerations, the assessment of the quality of life of persons affected by mental illness is now a central consideration in the evaluation of the totality of the impact of mental disorders.

There is considerable evidence that persons with mental disorders commonly rate their quality of life lower than those with no mental disorders. Multiple domains are often affected. Thus, poorer self-reported well-being in physical, social, environmental, as well as psychological domains may be reported. Persons with severe mental disorders, such as schizophrenia, bipolar disorder, dementia, and intellectual disabilities have lower scores on measures of quality of life than unaffected persons. There is also evidence that severe mental disorders are associated with more impairment in quality of life than common mental disorders such as mood and anxiety disorders, which themselves are associated with a substantial decrease in quality of life. Other than major depressive disorder

and generalized anxiety disorder, posttraumatic stress disorder, panic, social phobia, as well as primary insomnia and dependence states (including dependence on nicotine), are all associated with quality of life decrement.

Experience of stigma and discrimination is prevalent for people with mental illness and may be an important reason for impaired quality of life. Stigma can be defined as a social process with cognitive, attitudinal, behavioral, and structural elements that lead to social inequities, negative discriminatory treatment, and disadvantage to people with mental illness. Stigma can affect a variety of life situations of persons with mental illness, from befriending to neighborhood residence. It is a common source of disability for persons with mental health problems. A particularly important way in which stigma constitutes a burden for persons with mental illness is its potential to limit their opportunities for work. Work is important to mental health because it enhances a sense of self-worth and promotes social activity. When stigma and discrimination lead to exclusion from the workforce for people with mental illness, the result is not only material deprivation but a denial of the opportunity for full recovery and a perpetuation of disability.

### Economic Cost

Studies of the economic costs of mental disorders are few and have been mainly conducted in the developed countries of North America and Europe. Estimates often include the costs of health service uptake, production losses, and patients' out-of-pocket costs. It may also include health benefit claim costs and salary-replacement payments for patients who are on sick leave or have short- or long-term disability. Most attention has been given to severe mental disorders such as Alzheimer's disease, schizophrenia, and bipolar disorder. Findings suggest that, not unexpectedly, economic costs vary by country. For example, the per capita resources spent on care for people with schizophrenia in the United States have been estimated to be twice that in Canada. Variation in the economic costs of mental disorders may reflect differences in the organization of service and per capita income, among other reasons.

Health benefit costs and health-related absences constitute a financial burden for employers. The average number of missed workdays by employees with bipolar disorder or schizophrenia may be two to three times more than for employees without such disorders. There is also substantial cost associated with informal caregiving. For Alzheimer's disease, the annual cost of caregiving time and caregiver's lost earnings may be up to US \$18 000 per patient in some settings. The costs can add up to billions of dollars for countries. Community studies show common mental disorders to be associated with considerable economic cost. Depression imposes a much larger

economic burden on the society than chronic conditions such as hypertension, rheumatoid arthritis, and asthma. Mood disorders tend to be associated with higher per capita cost than anxiety disorders and alcohol-related disorders. However, in view of their higher prevalence, anxiety disorders impose more economic costs on the society. In the productive age of 18–65 years, loss of productivity accounts for much of the economic cost of common mental disorders.

### **Impact on Caregivers**

Persons suffering from illnesses such as dementia, intellectual disability, schizophrenia, and bipolar disorder commonly draw on informal family sources for their care. Indeed, families are important resources in the community care of people with a variety of mental illness. Parents, children, and spouses are the most common informal caregivers. There are more female than male carers across most cultures. Caring roles can be diverse, ranging from supervision, help with activities of daily living, to emotional support. Whatever the role, there is an extensive literature documenting the burden of caring for persons with mental illness on caregivers. The nature of the burden is often diverse. Psychological, physical, and social stresses are common. Among psychological distress, depression is the most extensively studied. For example, the prevalence of depression among carers of dementia sufferers may be up to 50%. Increased rates of anxiety and other psychiatric disorders are also found. Physical strain and physical health problems are frequent, especially when carers are themselves old. Compromised immune response has been reported and this is sometimes associated with increased susceptibility to physical illness, including infections. Economic loss is common, especially in lost earnings. Opportunities for social interactions and leisure are constrained and carers' quality of life is commonly lower than control groups with similar socio-demographic attributes but with no caring roles. Among patients' characteristics that increase burden on the carers are level of behavioral disturbance and severity of symptoms. Prolonged duration of contact between carer and patient is also a frequent factor.

### **Mortality**

Excess mortality has been clearly documented in patients with mental disorders. This has been attributed to both natural and unnatural causes. Standardized mortality ratios (SMRs) for both natural (deaths resulting from somatic diseases) and unnatural (deaths due to accidents and suicide) causes of death in psychiatric patients are more than twice that of the general population. SMRs for

unnatural causes of death are greater than that for natural causes. Neuropsychiatric disorders account for 1.4% of all years of life lost (YLL) and have been linked with significant reduction in life expectancy.

This excess mortality in patients with mental illness can be accounted for in part by the increased frequency of death from suicides and accidents. However, there is an excess mortality risk from all causes of death associated with mental disorders. Increased risk of death has been reported in patients with serious mental illness, particularly schizophrenia, dementia, major affective disorder, and substance use disorders. The leading causes of death include cardiovascular diseases, suicides, accidents, respiratory diseases, infections, and malignancies. Mortality rates are higher for men than women, but SMRs are higher for women. The highest mortality relative risk is observed between 20 and 40 years of age. There is increased risk of mortality in patients who had at least one episode of inpatient care compared with out-patients and more deaths occur in the first few years of follow-up after initial diagnosis and within a short time interval of last hospitalization.

The most commonly reported natural causes of death in psychiatric populations include cardiovascular disease, respiratory disease, infections, and metabolic disorders. The risk factors associated with this in patients with mental illness include higher rates of smoking and substance abuse, medication-induced weight gain, poor personal hygiene, and reduced physical activity. Another important factor is the health gap faced by people with mental illness; physical diseases are likely to go undetected or are inadequately treated. It has been suggested that up to one-third of psychiatric patients may harbor an undiagnosed medical condition. Some studies have also shown that patients with mental disorders may be less likely to receive appropriate medical or surgical intervention for physical illnesses than members of the general population with similar physical conditions.

### **Suicide and Accidental Deaths**

Suicides and accidental deaths are a major cause of excess mortality in persons with mental disorders. Deaths from suicide and accidents are usually significantly higher than expected in patients than in other individuals. Accidental deaths have been linked to substance use disorders, especially alcohol use, depressive disorders, anxiety disorders, adjustment disorders, and personality disorders. Accidental deaths are more common in men than in women and are significantly increased in the presence of comorbidities. The risk of accidental death is increased in patients aged between 30 and 49 years.

Worldwide, suicide is estimated to represent 1.8% of the total global burden of disease in 1998. In 2000, approximately one million people died from suicide: a global

mortality rate of 16 per 100 000. The majority of suicides occur in low- and middle-income countries. More than half of suicides occur in people aged 15–44 years; suicide is now ranked among the three leading causes of death in this age group for both sexes.

Mental disorders (particularly depression, substance abuse, schizophrenia, and other psychosis) are associated with more than 90% of all cases of suicide. Depression may account for up to 70% of all suicides. The lifetime risk of suicide in patients with mood disorders is about 30 times that of the general population. Higher rates of suicide are also found among unipolar depressed patients compared to those with bipolar affective disorders. The suicide risk in depressed patients is determined by the extent and severity of their symptoms. The severity of concurrent depressive symptoms rather than the presence of a depressive syndrome may determine suicidal behavior in patients with mixed affective or bipolar disorders. Schizophrenia is also associated with significant risk of suicide. The risk is increased, especially in young men, soon after diagnosis and in the presence of comorbid affective disorders.

High rates of psychiatric comorbidity have been reported in patients committing suicide. Comorbidity of psychiatric and personality disorder has been found to be an important risk factor for suicide. Personality traits that are thought to increase the risk of suicidal behavior include aggression and impulsivity. Mental illness necessitating admission has also been reported to be a strong risk factor for suicide. Suicidality is influenced by ethnic, sociodemographic, and psychological factors independent of diagnosis or diagnostic subgroup. Social and demographic factors associated with suicide include age, race, and marital status. Consistently lower rates of suicide have been reported in blacks compared to whites. On the other hand, higher mortality rates have been reported among separated, divorced, or widowed individuals than in those who were never married. Living alone has also been found to be a strong risk factor for suicide in psychiatric patients. With respect to gender, there are conflicting reports in the literature. Whereas some studies have found increased mortality in females, others report increased rates in men.

One of the strongest predictors of completed suicide is attempted suicide. Attempted suicide is also an indicator of extreme emotional distress (Kessler *et al.*, 2005). Epidemiologic surveys in the U.S. suggest that 1.1–4.6% of the general population attempt suicide at some time in their lifetime and that about 98% of those who make such an attempt may have a psychiatric diagnosis. The presence of any mental disorder is often a significant risk factor for suicidal attempt, but the odds for mood disorders are commonly higher than those for any other disorders. There is a significant link between suicidal attempts and comorbidity, with increased frequency of attempts with increasing number of psychiatric diagnoses. Adverse

experiences in childhood such as separation from parents, physical and sexual abuse, and maternal history of mental illness have been found to increase the likelihood of a history of lifetime suicidal attempt among adults (Gureje *et al.*, 2007). Given the relationship of such childhood adversities to mental disorders in adulthood, it is possible that they represent distal risk factors, while mental disorders represent more proximal vulnerabilities for suicidal behavior.

**See also:** Measurement of Psychiatric and Psychological Disorders and Outcomes in Populations; Mental Health Resources and Services; Stigma of Mental illness.

## Citations

- Gureje O, Kola L, Uwakwe R, *et al.* (2007) The profile and risks of suicidal behaviors in the Nigerian Survey of Mental Health and Well-Being. *Psychological Medicine* 37: 1–10.
- Kessler RC, Berglund P, Borges G, Nock M, and Wang PS (2005) Trends in suicide ideation, plans, gestures and attempts in the United States 1990–1992 to 2001–2003. *Journal of the American Medical Association* 293: 2487–2495.
- Ormel J, Oldenhinkel AJ, Nolen WA, and Vollebergh W (2004) Psychosocial disability before, during, and after a major depressive episode: A 3-wave population-based study of state, scar, and trait effects. *Archives of General Psychiatry* 61: 387–392.
- Ormel J, Petukhova M, Chatterji S, *et al.* (in press). Disability and treatment of specific mental and physical disorders across the world: Results from the WHO World Mental Health Surveys. *British Journal of Psychiatry*.
- World Health Organization (2001) *The World Health Report 2001. Mental Health: New Understanding, New Hope*. Geneva, Switzerland: World Health Organization.

## Further Reading

- Belfer ML and Nurcombe B (2007) The epidemiology of child and adolescent mental disorder. In: Remschmidt H, Nurcombe B, Belfer ML, Sartorius N and Okasha A (eds.) *The Mental Health Needs of Children and Adolescents: An Area of Global Neglect*, pp. 1–11. Chichester, UK: John Wiley and Sons.
- Bertelli M and Brown I (2006) Quality of life for people with intellectual disabilities. *Current Opinion in Psychiatry* 19: 508–513.
- Buish-Bouwman MA, de Graaf R, Vollebergh WA, *et al.* (2006) Functional disability of mental disorders and comparison with physical disorders: A study among the general population of six European countries. *Acta Psychiatrica Scandinavica* 113(6): 492–500.
- Cook JA (2006) Employment barriers for persons with psychiatric disabilities: Update of a report for the President's Commission. *Psychiatry Service* 57(10): 1391–1405.
- Coryell W, Scheftner W, Keller M, Endicott J, Maser J, and Klerman GL (1993) The enduring psychosocial consequences of mania and depression. *American Journal of Psychiatry* 150: 720–727.
- Evan S, Banerjee S, Leese M, and Huxley P (2007) The impact of mental illness on quality of life: A comparison of severe mental illness, common mental disorder and healthy population samples. *Quality of Life Resources* 16(1): 17–29.
- Gardner HH, Kleinman NL, Brook RA, Rajagopalan K, Brizee TJ, and Smeeding JE (2006) The economic impact of bipolar disorder in an employed population from an employer perspective. *Journal of Clinical Psychiatry* 67(8): 1209–1218.

- Harrington R, Fudge H, Rutter M, Pickles A, and Hill J (1990) Adult outcomes of childhood and adolescent depression: I. Psychiatric status. *Archives of General Psychiatry* 47: 465–473.
- Katschnig H, Freeman H and Sartorius N (eds.) (2006) *Quality of Life in Mental Disorders*. 2<sup>nd</sup> edn. Chichester, UK: Wiley.
- Keitner GI and Miller IW (1990) Family functioning and major depression: An overview. *American Journal of Psychiatry* 147: 1128–1137.
- Knapp M, McCrone Fombonne E, Beecham J, and Wostear G (2002) The Maudsley long-term follow up of child and adolescent depression: 3. Impact of comorbid conduct disorder on service use and costs in adulthood. *British Journal of Psychiatry* 180: 19–23.
- Kovess-Masfety V, Xavier M, Kustner BM, et al. (2006) Schizophrenia and quality of life: a one-year follow-up in four EU countries. *Biomedical Central Psychiatry* 6: 39.
- Lopez-Bastida J, Serrano-Aguilar P, Perestelo-Perez L, and Oliva-Moreno J (2006) Social-economic costs and quality of life of Alzheimer disease in the Canary Islands, Spain. *Neurology* 67(12): 2186–2191.
- Murray CJL and Lopez AD (1996) *The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability from Diseases, Injuries and Risk Factors in 1990 and Projected to 2020*. Cambridge, MA: Harvard University Press.
- Schene AH, van Wijngaarden B, and Koeter MW (1998) Family caregiving in schizophrenia: Domains and distress. *Schizophrenic Bulletin* 24(4): 609–618.
- Smit F, Cuijpers P, Oostenbrink J, et al. (2006) Costs of nine common mental disorders: Implications for curative and preventive psychiatry. *Journal of Mental Health Policy and Economics* 9(4): 193–200.
- Stein MB, Roy-Byrne PP, Craske MG, et al. (2005) Functional impact and health utility of anxiety disorders in primary care outpatients. *Medical Care* 43(12): 1164–1170.
- Stuart H (2006) Mental illness and employment discrimination. *Current Opinion in Psychiatry* 19: 522–526.
- Trivedi MH, Rush AJ, Wisniewski SR, et al. (2006) Factors associated with healthy-related quality of life among outpatients with major depressive disorder: A STAR\*D report. *Journal of Clinical Psychiatry* 67(2): 185–195.
- WHO International Consortium in Psychiatric Epidemiology (2000) Cross-national comparisons of the prevalences and correlates of mental disorders. WHO International Consortium in Psychiatric Epidemiology. *Bulletin of the World Health Organization* 78: 413–426.
- WHO World Mental Health Survey Consortium (2004) Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *Journal of the American Medical Association* 291: 2581–2590.

### Relevant Websites

- <http://www.nida.nih.gov/economiccosts> – National Institute on Drug Abuse.
- <http://www.hcp.med.harvard.edu/wrmh> – The World Mental Health Survey Initiative.
- <http://www.who.int/healthinfo/bodproject/> – World Health Organization Burden of Disease.

## Socio-Cultural Context of Substance Use/Abuse (Alcohol/Drugs/Tobacco)

D B Heath, Brown University, Providence, RI, USA

© 2008 Elsevier Inc. All rights reserved.

### Glossary

**Abuse** As used in this article, excessive or problematic use.

**Alcohol** As used in this article, ethanol (C<sub>2</sub>H<sub>5</sub>OH), also called ethyl alcohol. Also any beverage that contains more than 1% ethanol by weight.

**Drug** As used in this article, any substance that changes behavior and/or consciousness when ingested.

**Sociocultural** Associated with the order of society and of the associated system of patterns of belief and behavior (i.e., culture).

The use of alcohol and drugs is an ancient and widespread custom among human beings throughout the world. Although some such usage is commonplace, specific beliefs and practices vary markedly from one population to another,

and significant changes have occurred over time within many societies (Blum *et al.*, 1974). Far from being aberrant or isolated acts, alcohol and drug use are often highly valued and integrated with other aspects of the culture. This often involves important linkages between such use and religion, economics, diet, health beliefs and practices, social organization, literature and the arts, or other features of daily life, as well as with exceptional concerns. At the same time, it is important to acknowledge that alcohol and other drugs can be harmful to the user or others. They can be toxic, can greatly increase the risk of accidents, and can even cause physiological damage to various organs and social, psychological, and other disruptions. Dependence (often called addiction) is uncommon but is a major interference with a user's social obligations and expectations, which partly explains why abuse has been the subject of scientific study more than moderate use, which is much more common. In view of humankind's long ambivalence, a wide range of such sociocultural influences, in combination with the biophysiological impacts that alcohol and drugs have on the human