Investing in

MENTAL HEALTH

World Health Organization

This publication was produced by the Department of Mental Health and Substance Dependence, Noncommunicable Diseases and Mental Health, World Health Organization, Geneva.

For further information and feedback, please contact:
Department of Mental Health and Substance Dependence, Avenue Appia 20, 1211 Geneva 27, Switzerland
Tel: +41 22 791 21 11, fax: +41 22 791 41 60, e-mail: mnh@who.int, website: www.who.int/mental_health

WHO Library Cataloguing-in-Publication Data
World Health Organization.
Investing in mental health.
1.Mental disorders - economics 2.Mental disorders - therapy 3.Mental health services - economics
4.Mental health services - economics 5.Cost of illness 6.Investments I.Title.

ISBN 92 4 156257 9 (NLM classification: WM 30)

Designed by Tushita Graphic Vision Sàrl, CH-1226 Thônex, Geneva
Cover photo: © World Health Organization

Printed by Nove Impression, Switzerland

Content

Photo: © WHO, P. Virot

Introduction
by the Director-General

Mental health has been hidden behind a curtain of stigma and discrimination for too long. It is time to bring it out into the open. The magnitude, suffering and burden in terms of disability and costs for individuals, families and societies are staggering. In the last few years, the world has become more aware of this enormous burden and the potential for mental health gains. We can make a difference using existing knowledge ready to be applied.

We need to enhance our investment in mental health substantially and we need to do it now.

What kinds of investment?

Investment of financial and human resources. A higher proportion of national budgets should be allocated to developing adequate infrastructure and services for mental health. At the same time, more human resources are needed to provide care for those with mental disorders and to protect and promote mental health. Countries, especially those with limited resources, need to establish specifically targeted policies, plans and initiatives to promote and support mental health.

Who needs to invest? All of us with interest in the health and development of people and communities. This includes international organizations, development aid agencies, trusts/foundations, businesses and governments.

What can we expect from such investment?

It should be able to provide the much-needed services, treatment and support to a larger proportion of the nearly 450 million people suffering from mental disorders than they receive at present: services that are more effective and more humane; treatments that help them avoid chronic disability and premature death; and support that gives them a life that is healthier and richer – a life lived with dignity. We can also expect greater financial returns from increased productivity and lower net costs of illness and care, apart from savings in other sector outlays.

Overall, this investment will result in individuals and communities who are better able to avoid or cope with the stresses and conflicts that are part of everyday life, and who will therefore enjoy a better quality of life and better health.

Lee Jong-wook

Executive Summary

For all individuals, mental, physical and social health are vital and interwoven strands of life. As our understanding of this relationship grows, it becomes ever more apparent that mental health is crucial to the overall well-being of individuals, societies and countries. Indeed, mental health can be defined as a state of well-being enabling individuals to realize their abilities, cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their communities. Unfortunately, in most parts of the world, mental health and mental disorders are not accorded anywhere near the same degree of importance as physical health. Rather, they have been largely ignored or neglected.

The magnitude and burdens of the problem

- As many as 450 million people suffer from a mental or behavioural disorder.
- Nearly 1 million people commit suicide every year.
- Four of the six leading causes of years lived with disability are due to neuropsychiatric disorders (depression, alcohol-use disorders, schizophrenia and bipolar disorder).
- One in four families has at least one member with a mental disorder. Family members are often the primary caregivers of people with mental disorders. The extent of the burden of mental disorders on family members is difficult to assess and quantify, and is consequently often ignored. However, it does have a significant impact on the family's quality of life.
- In addition to the health and social costs, those suffering from mental illnesses are also victims of human rights violations, stigma and discrimination, both inside and outside psychiatric institutions.

This publication aims to guide you in the discovery of mental health, in the magnitude and burdens of mental disorders, and in understanding what can be done to promote mental health in the world and to alleviate the burdens and avoid deaths due to mental disorders. Effective treatments and interventions that are also cost-effective are now readily available. It is therefore time to overcome barriers and work together in a joint effort to narrow the gap between what needs to be done and what is actually being done, between the burden of mental disorders and the resources being used to address this problem. Closing the gap is a clear obligation not only for the World Health Organization, but also for governments, aid and development agencies, foundations, research institutions and the business community.

The economic burden of mental disorders

Given the prevalence of mental health and substance-dependence problems in adults and children, it is not surprising that there is an enormous emotional as well as financial burden on individuals, their families and society as a whole. The economic impacts of mental illness affect personal income, the ability of ill persons – and often their caregivers – to work, productivity in the workplace and contributions to the national economy, as well as the utilization of treatment and support services. The cost of mental health problems in developed countries is estimated to be between 3% and 4% of GNP. However, mental disorders cost national economies several billion dollars, both in terms of expenditures incurred and loss of productivity. The average annual costs, including medical, pharmaceutical and disability costs, for employees with depression may be 4.2 times higher than those incurred by a typical beneficiary. However, the cost of treatment is often completely offset by a reduction in the number of days of absenteeism and productivity lost while at work.

Alleviating the problem: prevention, promotion and management programmes

A combination of well-targeted treatment and prevention programmes in the field of mental health, within overall public strategies, could avoid years lived with disability and deaths, reduce the stigma attached to mental disorders, increase considerably the social capital, help reduce poverty and promote a country's development.

Studies provide examples of effective programmes targeted at different age groups – from prenatal and early infancy programmes, through adolescence to old age – and different situations, such as post-traumatic stress following accidents, marital stress, work-related stress, and depression or anxiety due to job loss, widowhood or adjustment to retirement. Many more studies need to be conducted in this area, particularly in low- and middle-income countries. There is strong evidence to show that successful interventions for schizophrenia, depression and other mental disorders are not only available, but are also affordable and cost-effective.

Yet there is an enormous gap between the need for treatment of mental disorders and the resources available. In developed countries with well organized health care systems, between 44% and 70% of patients with mental disorders do not receive treatment. In developing countries the figures are even more startling, with the treatment gap being close to 90%.

WHO's Mental Health Global Action Programme (mhGAP)

To overcome barriers to closing the gap between resources and the need for treatment of mental disorders, and to reduce the number of years lived with disability and deaths associated with such disorders, the World Health Organization has created the Mental Health Global Action Programme (mhGAP) as part of a major effort to implement the recommendations of the World Health Report 2001 on mental health. The programme is based on strategies aimed at improving the mental health of populations. To implement those strategies, WHO is undertaking different projects and activities, such as the Global Campaign against Epilepsy, the Global Campaign for Suicide Prevention, building national capacity to create a policy on alcohol use, and assisting countries in developing alcohol-related services. WHO is also developing guidelines for mental health interventions in emergencies, and for the management of depression, schizophrenia, alcohol-related disorders, drug use, epilepsy and other neurological disorders. These projects are designed within a framework of activities which includes support to countries in monitoring their mental health systems, formulating policies, improving legislation and reorganizing their services. These efforts are largely focused on low- and middle-income countries, where the service gaps are the largest.

Investing in mental health today can generate enormous returns in terms of reducing disability and preventing premature death. The priorities are well known and the projects and activities needed are clear and possible. It is our responsibility to turn the possibilities to reality.

The burden of mental disorders is expected to rise significantly over the next 20 years:

Are we doing enough to address the growing mental health challenges?

What is mental health?

Mental health is more than the mere lack of mental disorders. The positive dimension of mental health is stressed in WHO's definition of health as contained in its constitution: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Concepts of mental health include subjective well-being, perceived self-efficacy, autonomy, competence, intergenerational dependence and recognition of the ability to realize one's intellectual and emotional potential. It has also been defined as a state of well-being whereby individuals recognize their abilities, are able to cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their communities. Mental health is about enhancing competencies of individuals and communities and enabling them to achieve their self-determined goals. Mental health should be a concern for all of us, rather than only for those who suffer from a mental disorder.

Mental health problems affect society as a whole, and not just a small, isolated segment. They are therefore a major challenge to global development. No group is immune to mental disorders, but the risk is higher among the poor, homeless, the unemployed, persons with low education, victims of violence, migrants and refugees, indigenous populations, children and adolescents, abused women and the neglected elderly.

For all individuals, mental, physical and social health are closely interwoven, vital strands of life. As our understanding of this interdependent relationship grows, it becomes ever more apparent that mental health is crucial to the overall well-being of individuals, societies and countries. Unfortunately, in most parts of the world, mental health and mental disorders are not accorded anywhere the same importance as physical health. Rather, they have been largely ignored or neglected.

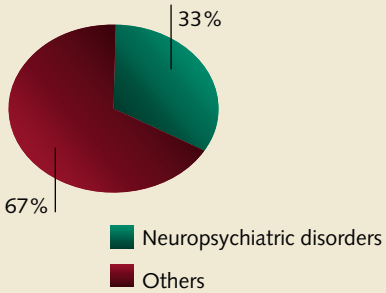
The magnitude and burdens of mental disorders

A huge toll

Today, about **450 million people suffer from a mental or behavioural disorder.** According to WHO's Global Burden of Disease 2001, 33% of the years lived with disability (YLD) are due to neuropsychiatric disorders, a further 2.1% to intentional injuries (Figure 1). Unipolar depressive disorders alone lead to 12.15% of years lived with disability, and rank as the third leading contributor to the global burden of diseases. Four of the six leading causes of years lived with disability are due to neuropsychiatric disorders (depression, alcohol-use disorders, schizophrenia and bipolar disorder).

1

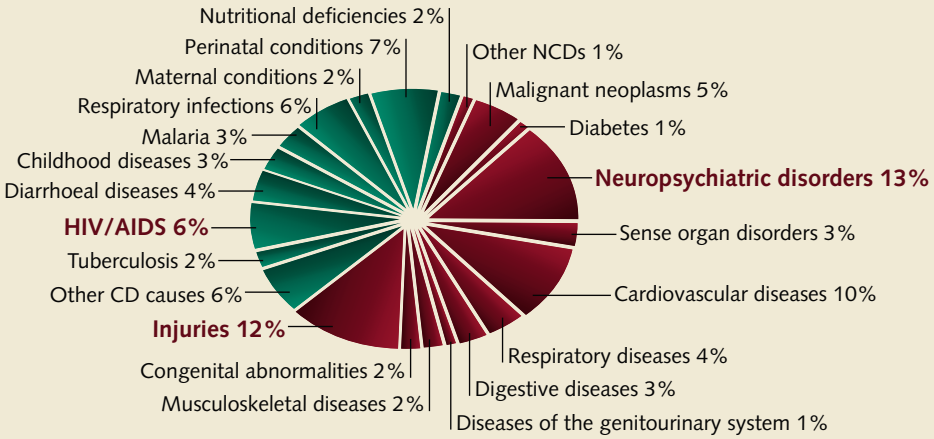
Years lived with disability (YLD): World



Source: WHR, 2002

2

Burden of diseases worldwide: Disability adjusted life years (DALYs), 2001



Source: WHR, 2002

Neuropsychiatric conditions account for 13% of disability adjusted life years (DALYs), intentional injuries for 3.3% and HIV/AIDS for another 6% (Figure 2). These latter two have a behavioural component linked to mental health. Moreover, behind these oft-repeated figures lies enormous human suffering.

- More than 150 million persons suffer from depression at any point in time;
- Nearly 1 million commit suicide every year;
- About 25 million suffer from schizophrenia;
- 38 million suffer from epilepsy; and
- More than 90 million suffer from an alcohol- or drug-use disorder.

The number of individuals with disorders is likely to increase further in view of the ageing of the population, worsening social problems and civil unrest.

This growing burden amounts to a huge cost in terms of human misery, disability and economic loss.

Mental and behavioural problems as risk factors for morbidity and mortality

It is becoming increasingly clear that mental functioning is fundamentally interconnected with physical and social functioning and health outcomes. For example, depression is a risk factor for cancer and heart diseases. And mental disorders such as depression, anxiety and substance-use disorders in patients who also suffer from physical disorders may result in poor compliance and failure to adhere to their treatment schedules. Furthermore, a number of behaviours such as smoking and sexual activities have been linked to the development of physical disorders such as carcinoma and HIV/AIDS.

Among the 10 leading risk factors for the global burden of disease measured in DALYs, as identified in the World Health Report 2002, three were mental/behavioural (unsafe sex, tobacco use, alcohol use) and three others were significantly affected by mental/behavioural factors (overweight, blood pressure and cholesterol).

Photo: © WHO, P. Virot

Mental disorders and medical illness are interrelated

Treating comorbid depression could increase adherence to interventions for chronic medical illness

Comorbid depression is the existence of a depressive disorder (i.e. major depression, dysthymia or adjustment disorder) along with a physical disease (infectious, cardiovascular diseases, neurological disorders, diabetes mellitus or cancer). It is neither a chance phenomenon nor a mere feeling of demoralization or sadness brought on by the hardships of a chronic illness. While the prevalence of major depression in the general population can go from an average 3% up to 10%, it is consistently higher in people affected by chronic disease (Figure 3).

Patients with comorbid depression are less likely to adhere to medical treatment or recommendations, and are at increased risk of disability and mortality.

For example, it has been shown that depressed patients are three times more likely not to comply with medical regimens than non-depressed patients; there is also evidence that depression predicts the incidence of heart disease. In the case of infectious diseases, non-adherence can lead to drug resistance, and this has profound public health implications concerning resistant infectious agents.

Illness-associated depression impairs quality of life and several aspects of the functioning of patients with chronic diseases; moreover, it results in higher health care utilization and costs.

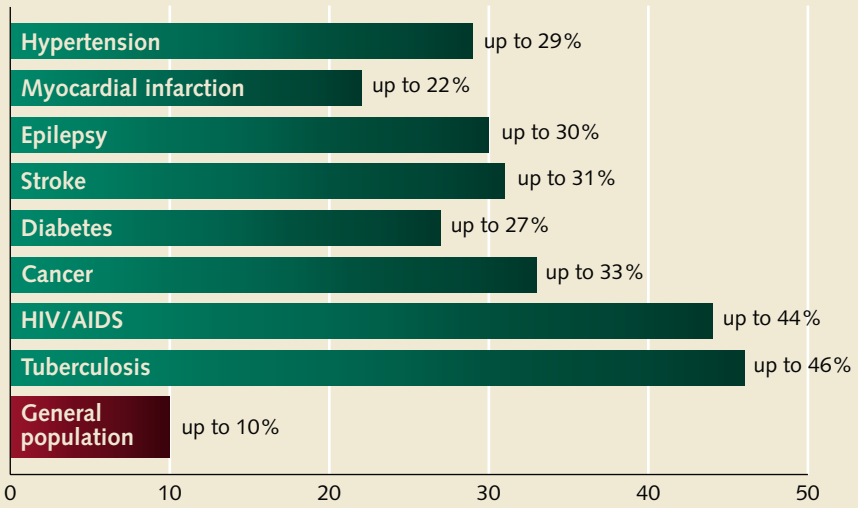
Clinical trials have consistently demonstrated the efficacy of antidepressant treatment in patients with comorbid depression and chronic medical illness. Such treatment improves their overall medical outcomes.

Comorbidity, which signifies the simultaneous occurrence in a person of two or more disorders, is a topic of considerable and growing interest in the context of health care. Research supports the view that a number of mental disorders (e.g. depression, anxiety, substance abuse) occur in people suffering from both non-communicable and communicable diseases more often than would be expected by chance. And people suffering from chronic physical conditions have a greater probability of developing mental disorders such as depression. Rates of suicide are higher among people with physical disorders than among other people.

Comorbidity results in lower adherence to medical treatment, an increase in disability and mortality, and higher health costs. However, comorbid mental disorders are often underrecognized and not always effectively treated. Increased awareness and understanding, as well as comprehensive integrated management may alleviate the burden caused by comorbid mental disorders on the individual, society and the health services.

3

Prevalence of major depression in patients with physical illnesses



Source: WHO, 2003, unpublished document

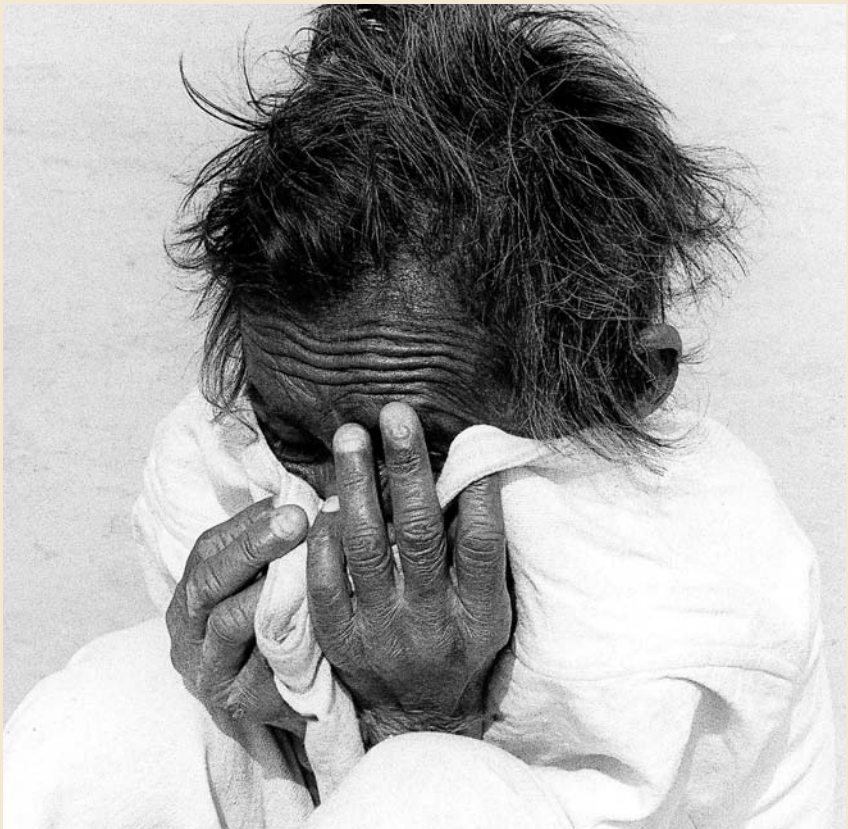


Photo: © WHO, A.S. Kochar

Mental disorders: a significant burden on the family.

The burden of mental disorders goes beyond that which has been defined by Disability Adjusted Life Years.

The extent of the burden of mental disorders on family members is difficult to assess and quantify, and is consequently often ignored. However, it does have a significant impact on the family's quality of life.

Family burden cannot be ignored

Family members are often the primary caregivers of people with mental disorders. They provide emotional and physical support, and often have to bear the financial expenses associated with mental health treatment and care. It is estimated that one in four families has at least one member currently suffering from a mental or behavioural disorder. In addition to the obvious distress of seeing a loved-one disabled by the consequences of a mental disorder, family members are also exposed to the stigma and discrimination associated with mental ill health. Rejection by friends, relatives, neighbours and the community as a whole can increase the family's sense of isolation, resulting in restricted social activities, and the denial of equal participation in normal social networks.

Informal caregivers need more support. The failure of society to acknowledge the burden of mental disorders on affected families means that very little support is available to them. Expenses for the treatment of mental illness are often borne by the family because they are generally not covered by the State or by insurance. Family members may need to set aside a significant amount of their time to care for a person with a mental disorder. Unfortunately, the lack of understanding on the part of most employers, and the lack of special employment schemes to address this issue, sometimes render it difficult for family members to gain employment or to hold on to an existing job, or they may suffer a loss of earnings due to days taken off from work. This compounds the financial costs associated with treating and caring for someone with a mental disorder.

Talking about mental disorders means talking about stigma and human rights

Persons with mental disorders often suffer a wide range of human rights violations and social stigma.

In many countries, people with mental disorders have limited access to the mental health treatment and care they require, due to the lack of mental health services in the area in which they live or in the country as a whole. For example, the WHO Atlas Survey showed that 65% of psychiatric beds are in mental hospitals, where conditions are extremely unsatisfactory. Inpatient places should be moved from mental hospitals to general hospitals and community rehabilitation services.

Violations in psychiatric institutions are rife

Many psychiatric institutions have inadequate, degrading and even harmful care and treatment practices, as well as unhygienic and inhuman living conditions. For example, there have been documented cases of people being tied to logs far away from their communities for extensive periods of time and with inadequate food, shelter or clothing. Furthermore, often people are admitted to and treated in mental health facilities against their will. Issues concerning consent for admission and treatment are often ignored, and independent assessments of capacity are not undertaken. This

In addition to the social and economic toll, those suffering from mental illnesses are also victims of human rights violations, stigma and discrimination.

means that people can be locked away for extensive periods of time, sometimes even for life, despite having the capacity to decide their future and lead a life within their community.

Violations also occur outside institutions: the stigma of mental illness

In both low- and high-income countries, there is a long history of people with mental disorders being stigmatized along with their families. This is manifested by stereotyping, fear, embarrassment, anger, and rejection or avoidance. The myths and misconceptions associated with mental disorders negatively affect the day-to-day lives of sufferers, leading to discrimination and the denial of even the most basic human rights. All over the world, people with mental disorders face unfair denial of employment and educational opportunities, and discrimination in health insurance and housing policies. In certain countries, mental disorders can be grounds for denying people the right to vote and to membership of professional associations. In others, a marriage can be annulled if the woman has suffered from a mental disorder. Such stigma and discrimination can, in turn, affect a person's ability to gain access to appropriate care, recover from his or her illness and integrate into society.

Human rights violations of people with mental disorders: the voice of sufferers

Caged beds

Many psychiatric institutions, general hospitals and social care homes in countries continue to use caged beds routinely to restrain patients with mental disorders and mental retardation. Caged beds are beds with netting or, in some cases, metal bars, which serve to physically restrain the patients. Patients are often kept in caged beds for extended periods, sometimes even years. This type of restraint is often used when staff levels or training are inadequate, and sometimes as a form of punishment or threat of punishment. The use of restraints such as caged beds restricts the mobility of patients, which can result in a number of physical hazards such as pressure sores, not to mention the harmful psychological effects. People have described the experience as being emotionally devastating, frightening, humiliating, degrading and disempowering. (*Caged Beds – Inhuman and Degrading Treatment in Four EU Accession Countries*, Mental Disability Advocacy Center, 2003)

Chained and burned due to accidental fire

August 2001: Twenty-five people were charred to death in Erwadi, India. A devastating fire broke out at 5 a.m. in the asylum. Of the 46 with mental disorders, 40 had been chained to their beds. Erwadi had long been considered a holy place, famous for its *dargah*. During the course of the "treatment", the persons with mental disorders were frequently caned, whipped and beaten up in the name of "driving away the evil". During the day, they were tied to trees with thick ropes. At night, they were tied to their beds with iron chains. (www.indiatogether.org)

The economic burden of mental disorders

Given the prevalence of mental health and substance-dependence problems in adults and children, the emotional, but also financial, burden on individuals, their families and society as a whole is enormous, as noted earlier. The economic impacts of mental illness include its effects on personal income, the ability of the persons with mental disorders or their caregivers to work and make productive contributions to the national economy, as well as the utilization of treatment and support services (Table 1).

Table 1. The overall economic burden of mental disorders

	Care costs	Productivity costs	Other costs
Sufferers	Treatment and service fees/payments	Work disability; lost earnings	Anguish/suffering; treatment side-effects; suicide
Family and friends	Informal care-giving	Time off work	Anguish; isolation; stigma
Employers	Contributions to treatment and care	Reduced productivity	–
Society	Provision of mental health care and general medical care (taxation/insurance)	Reduced productivity	Loss of lives; untreated illnesses (unmet needs); social exclusion

To gauge the measurable economic burden of mental illness, in table 2 the diverse economic impacts have been transformed into a single cost-based measure, and organized by types of costs based on expenditures made or resources lost.

An important characteristic of mental disorders is that mortality is relatively low, onset often occurs at a young age, and the indirect costs derived from lost or reduced productivity in the workplace are high.

Table 2. Types of measurable costs

	Core costs	Other non-health costs
Direct costs (payments made)	• Treatment and service fees/payments	• Social welfare administration • Public and private criminal justice system • Transportation
Indirect costs (resources lost)	• Morbidity costs (in terms of value of lost productivity) • Mortality costs	• Value of family caregivers' time

Mental disorders impose a range of costs on individuals, households, employers and society as a whole.

How much does mental illness cost?

Estimates of costs are not available for all the various disorders, and certainly not for all the countries in the world. Most methodologically sound studies have been conducted in the United States and the United Kingdom. At 1990 prices, mental health problems accounted for about 2.5% of GNP in the United States (Rice et al., 1990). In the Member States of the European Union the cost of mental health problems is estimated to be between 3% and 4% of GNP (ILO, 2000), of which health-care costs account for an average of 2% of GNP.

- For the **United States** Rice and colleagues calculated an aggregate cost of US$ 148 billion (at 1990 prices) for all mental disorders. One of the most important findings is that the indirect costs either match or outweigh the direct costs for all mental health areas. Spending on treatment for mental health and substance abuse in the United States alone was estimated at US$ 85.3 billion in 1997: US$ 73.4 billion for mental illness and US$ 11.9 billion for substance abuse (Mark et al., 2000).
- The estimated total burden of mental health problems in **Canada** for 1998 was at least Can$ 14.4 billion: Can$ 8.1 billion in lost productivity and Can$ 6.3 billion for treatments (Stephens & Joubert, 2001). This makes mental health problems one of the costliest conditions in Canada.
- Patel and Knapp (1997) estimated the aggregate costs of all mental disorders in the **United Kingdom** at £32 billion (1996/97 prices), 45% of which was due to lost productivity.

Photo: © WHO, A. Waak

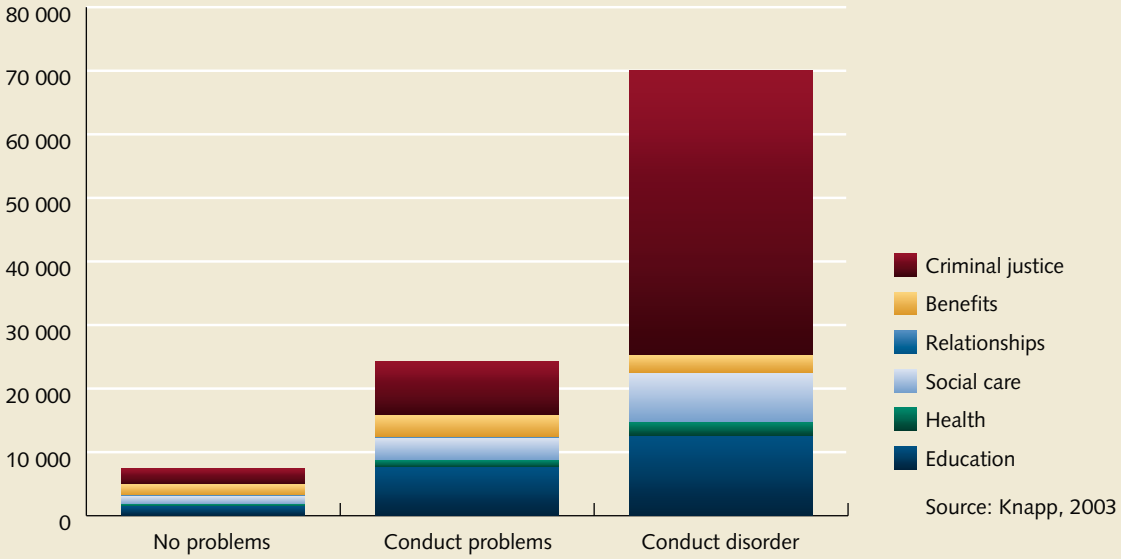
Mental health problems in childhood generate additional costs in adulthood

The costs of childhood disorders can be both large and largely hidden (Knapp et al., 1999). Early onset of mental disorders disrupts education and early careers (Kessler et al., 1995). The consequences in adulthood can be enormous if effective treatment is not provided (Maughan & Rutter, 1998). Knapp shows in figure 4 that children with conduct disorders generate substantial additional costs from ages 10 to 27 years. These are not mainly related to health, as one would expect, but to education and criminal justice, creating a serious challenge for the social capital as a whole.

4

Costs in adulthood of childhood mental health problems

Additional costs from 10-27 years (in £)



Source: Knapp, 2003

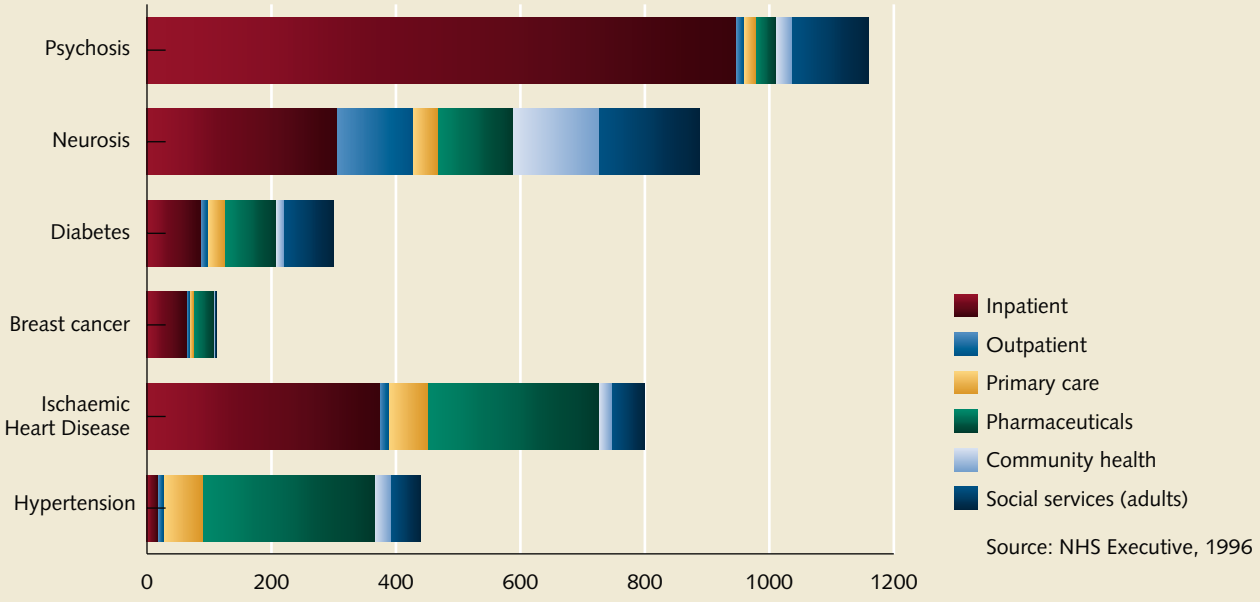
High costs of mental disorders compared to other major chronic conditions

A recent comparative study of the burdens of disease carried out within the United Kingdom's National Health Service (NHS) demonstrated the relative and absolute costs of care for a wide range of disorders, including the comparatively high annual expenditure associated with chronic disease conditions such as psychosis and neurosis (NHS Executive, 1996; Figure 5 below).

5

NHS burdens of disease, 1996

£ million, 1992/93



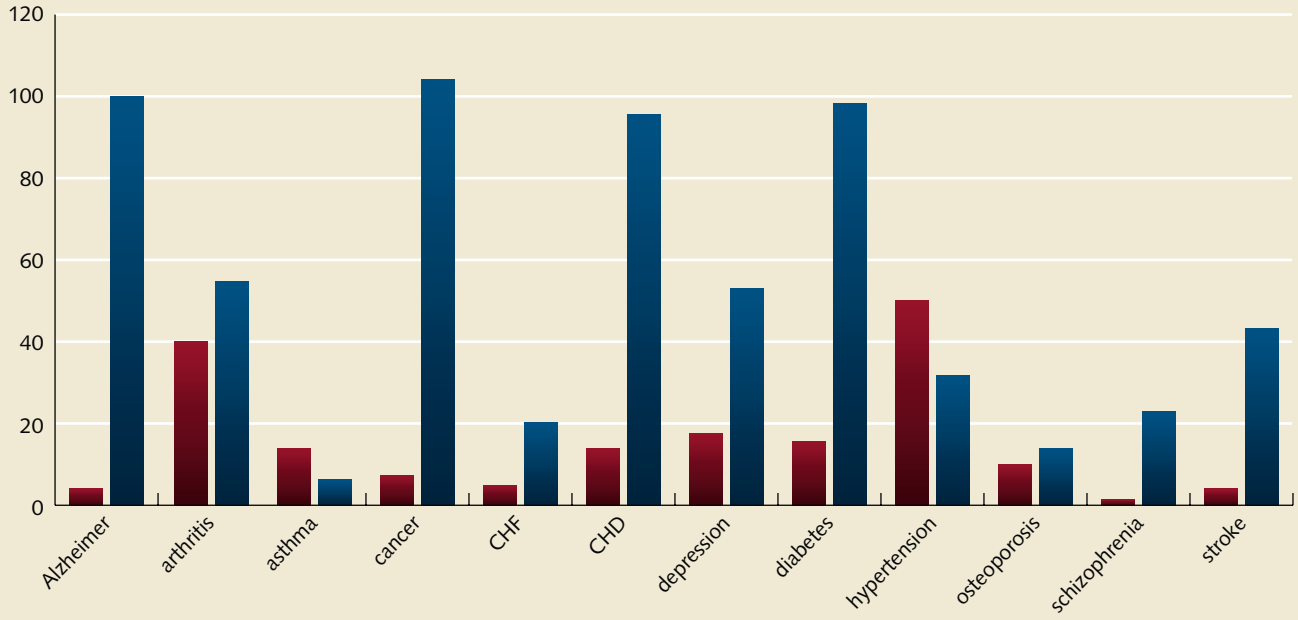
Source: NHS Executive, 1996

Another recent study (Berto et al., 2000) presents prevalence and total management costs of diseases such as Alzheimer's, asthma, cancer, depression, osteoporosis, hypertension and schizophrenia. As shown in figure 6 for the United States, three mental disorders considered by Berto et al. (Alzheimer's disease, depression and schizophrenia) present a high prevalence-cost ratio.

6

Prevalence and cost of major chronic conditions: United States

(in millions)



Source: Berto et al., 2000

CHF: congestive heart failure

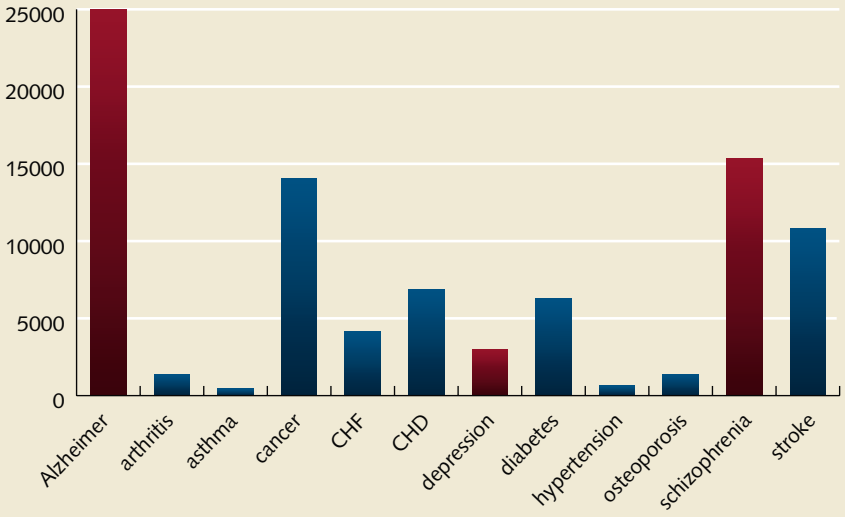
CHD: coronary heart disease

Even more interesting is to consider different diseases in terms of the average cost per patient, as shown in figure 7: Alzheimer's disease and schizophrenia are the two most costly diseases, their average cost per patient being higher than cancer and stroke.

7

Yearly cost per patient of selected major conditions: United States

US$/patient/year



CHF: congestive heart failure
CHD: coronary heart disease

Source: Berto et al., 2000

In many developed countries, 35% to 45% of absenteeism from work is due to mental health problems

In the United States, mental illness is considered responsible for an estimated 59% of the economic costs deriving from injury or illness-related loss of productivity, followed by alcohol abuse at 34% (Rouse, 1995). A report from a Canadian university (Université Laval, 2002) revealed that absences for psychological reasons had increased 400% from 1993 to 1999, and that the costs of replacement, together with those of salary insurance, amounted to Can$ 3 million for the year 2001. A survey on psychiatric morbidity in the United Kingdom showed that people with psychosis took an average of 42 days a year off work. The same survey reveals that persons with two or more neurotic disorders had an average of 28 days off per year compared to 8 days off for those with one neurotic disorder (Patel & Knapp, 1997).

Decreased productivity at work:

even if an employee does not take sick leave, mental health problems can result in a substantial reduction in the usual level of activity and performance

A recent study from Harvard Medical School examined the impact of psychiatric disorders on work loss days (absence from work) among major occupational groups in the United States (Kessler & Frank, 1997). The average number of work loss days attributable to psychiatric disorders was 6 days per month per 100 workers; and the number of work cutback days (getting less done than usual) was 31 days per month per 100 workers. Although the effects on work loss were not significantly different across occupations, the effects on work cutback were greater among professional workers. Work loss and cutback were found to be more prevalent among those with comorbid disorders than among those with single disorders. The study presents an annualized national projection of over 4 million work loss days and 20 million work cutback days in the United States.

Photo: © WHO, P. Virot

Mental illness affects access to the job market and job retention

The special case of depression

The burden of depression is rising, affecting both the working and social lives of individuals.

In the United States, it has been estimated that 1.8% to 3.6% of workers suffer from a major depression, and that employees with depression are disabled at nearly twice the rate of persons without depression (Goldberg & Steury, 2001). In 2000, 7.8 million Canadians were treated for depression, which represents an increase of 36% compared to the previous year.

In a large United States financial services company, depression resulted in an average of 44 work-days taken off for short-term disability as compared to 42 days for heart disease, 39 days for lower back pain, and 21 days for asthma (Conti & Burton, 1994). Studies suggest that the average annual costs, including medical, pharmaceutical and disability costs, for employees with depression may be 4.2 times higher than those incurred by a typical beneficiary (Birnbaum & al., 1999). However, it has also been found that the cost of treatment for depression is completely offset by a reduction in the number of days of absenteeism. Moreover, it is demonstrated that the cost of achieving a partial or full remission from major depression declined between 1991 and 1996.

If the burden of depression is rising, costs to treat it are declining, and the quality of care has been improving over time. Specific investments to prevent and cure major depression can and should be made in both developed and developing countries.

In the United States 5–6 million workers between the ages of 16 and 54 years either lose, fail to seek, or cannot find employment as a consequence of mental illness. Among those who do manage to find work, it has been estimated that mental illness decreases annual income by US$ 3500 to US$ 6000 (Marcotte & Wilcox-Gok, 2001).

In the United Kingdom, a 1995 survey revealed that over half of the people with psychosis were classed as permanently unable to work, about a fifth were in employment and one in eight was unemployed (Patel & Knapp, 1997).

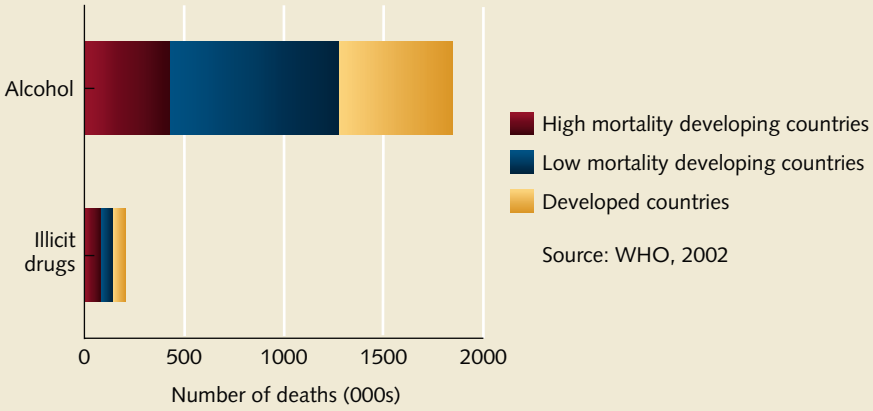
Individuals with comorbid mental and physical disorders consistently have lower rates of employment than persons with a physical disorder alone. In several surveys, approximately 20% fewer individuals with both physical and mental disorders reported being employed than individuals with only a physical disorder (McAlpine & Warner, 2002).

The burden of substance abuse

- 76.3 million persons are diagnosed with alcohol disorders;
- At least 15.3 million persons are affected by disorders related to drug use;
- Between 5 and 10 million people currently inject drugs;
- 5%–10% of all new HIV infections globally result from injecting drugs;
- More than 1.8 million deaths in 2000 were attributed to alcohol-related risks;
- 205,000 deaths in 2000 were attributed to illicit drug use (Figure 8);
- The government, drug abusers and their families shoulder the main economic burden of drug abuse; and
- For every dollar invested in drug treatment, seven dollars are saved in health and social costs.

8

Deaths in 2000 attributed to addictive substance abuse-related risks



Source: WHO, 2002

Abuse of alcohol and other substances continues to be one of the most serious public health problems in both developed and developing countries. Worldwide, alcohol accounted for 4% of the total burden of diseases in 2000.

In **Latin American** countries, alcohol was the leading risk factor for the global burden of diseases in 2000. Of an estimated 246,000 alcohol-related deaths in this region, about 61,000 were due to unintentional and intentional injuries (WHO, 2002), all of which could have been prevented. Alcohol abuse is also responsible for neuropsychiatric disorders, domestic violence, child abuse and neglect, and productivity loss.

In **South Africa,** 25%–30% of general hospital admissions are directly or indirectly related to alcohol abuse (Albertyn & McCann, 1993), and 60%–75% of admissions in specialized substance abuse treatment centres are for alcohol-related problems and dependence. Almost 80% of all assault patients (both males and females) presenting to an urban trauma unit in Cape Town were either under the influence of alcohol, or injured because of alcohol-related violence (Steyn, 1996). The majority of victims of train-related accidents, traffic accidents – both pedestrians and drivers – had blood alcohol levels exceeding the legal limits (Van Kralingen et al, 1991). Foetal alcohol syndrome is by far the most common cause of mental disability in the country (Department of Trade and Industry, 1997).

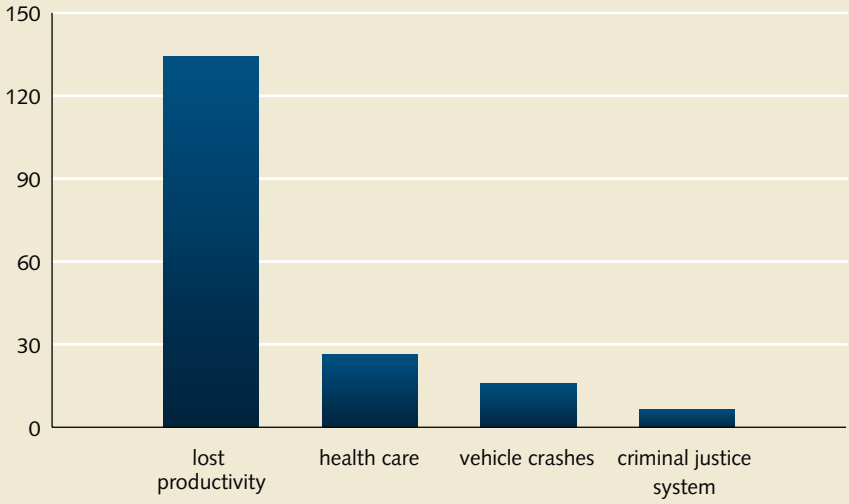
In **Asia,** substance abuse is considered the main cause in 18% of cases presenting problems in the workplace (EAP, 2002). In Thailand, the percentage of substance abusers aged 12–65 years varies from 8.6% to 25% in different regions of the country, the highest percentage being in the north-east. In New Zealand (with a population of 3.4 million) alcohol-related lost productivity among the working population was estimated to be US$ 57 million a year (Jones et al., 1995).

In the **United States,** the total economic cost of alcohol abuse was estimated at US$ 185 billion for 1998 (Harwood, 2000). More than 70% of this cost was attributed to lost productivity (US$ 134.2 billion), including losses from alcohol-related illness (US$ 87.6 billion), premature death (US$ 36.5 billion) and crime (US$ 10.1 billion). Health care expenditures accounted for US$ 26.3 billion, of which US$ 7.5 billion was spent on treating alcohol abuse and dependence and US$ 18.9 billion on treating the adverse medical consequences of alcohol consumption. Other estimated costs included property and administrative costs due to alcohol-related automobile crashes (US$ 15.7 billion), and the costs of the criminal justice system for alcohol-related crime (US$ 6.3 billion) (Figure 9).

In the **United Kingdom,** about 150,000 people are admitted to hospital each year due to alcohol-related accidents and illnesses. Alcohol is associated with up to 22,000 deaths a year. Deaths from cirrhosis of the liver have nearly doubled in the last 10 years. A recent government report shows that alcohol abuse costs the country at least £20 billion a year. The study found that 17 million workdays are lost to hangovers and alcohol-related illnesses each year. This costs employers £6.4 billion. One in 26 NHS "bed days" is taken up by alcohol-related illness, resulting in an annual cost to the taxpayer of £1.7 billion. The cost of clearing up alcohol-related crime is a further £7.3 billion a year. Moreover, drink leads to a further £6 billion in "social costs".

9

Cost of alcohol abuse in USA, billion US$, 1998

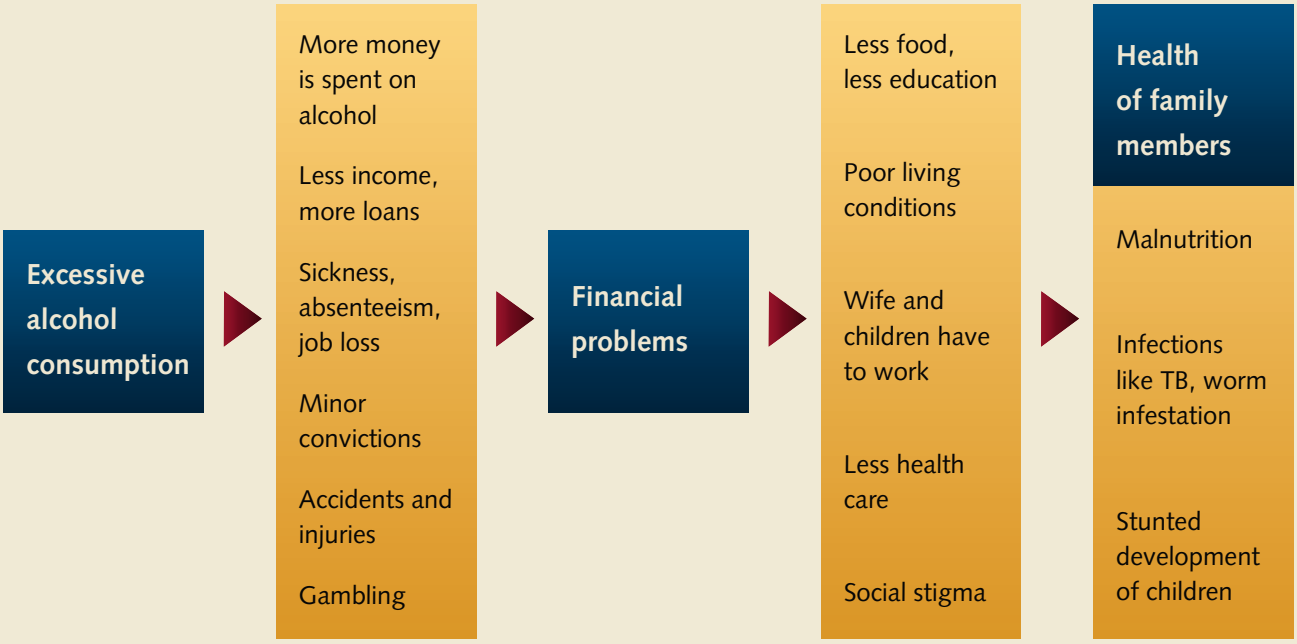


Source: Harwood, 2000

Diseases related to alcohol and substance abuse are therefore a serious public problem. They affect development of the human and social capital, creating not only economic costs for society as a whole, including the health system, but also social costs in terms of injuries, violence and crime. They also affect the well-being of future generations (Figure 10).

10

Excessive alcohol consumption and impaired health of the family



Talking about mental disorders means talking about poverty: the two are linked in a vicious circle

Since mental disorders generate costs in terms of long-term treatment and lost productivity, it can be argued that such disorders contribute significantly to poverty. At the same time, insecurity, low educational levels, inadequate housing and malnutrition have all been recognized as contributing to common mental disorders. There is scientific evidence that depression is 1.5 to 2 times more prevalent among the low-income groups of a population. Poverty could therefore be considered a significant contributor to mental disorders, and vice-versa. The two are thus linked in a vicious circle (Figure 11), and affect several dimensions of individual and social development:

Work

Unemployed persons and those who fail to gain employment have more depressive symptoms than individuals who find a job (Bolton & Oakley, 1987; Kessler & al., 1989; Simon & al., 2000). Moreover, employed persons who have lost their jobs are twice as likely to be depressed as persons who retain their jobs (Dooley & al., 1994).

Education

Studies have shown a significant relationship between the prevalence of common mental disorders and low educational levels (Patel & Kleinman, 2003). Moreover, a low educational level prevents access to most professional jobs, increases vulnerability and insecurity and contributes to a persistently low social capital. Illiteracy and illness therefore lock in poverty.

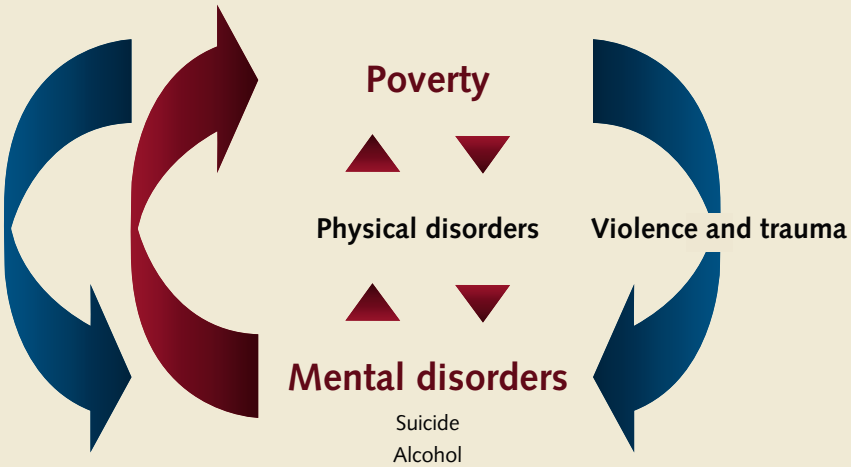
Violence and trauma

In communities afflicted by poverty, violence and abuse are not unusual. They affect general mental well-being, and can induce mental disorders in the most vulnerable.

Without well-targeted and structured investment in mental health, the vicious circle of poverty and mental disorders will be perpetuated, thereby preventing poverty alleviation and development.

11

Poverty and mental disorders: a vicious circle



Promoting mental health; preventing and managing mental ill health

In order to reduce the increasing burden of mental disorders and avoid years lived with disability or death, priority should be given to prevention and promotion in the field of mental health. Preventive and promotional strategies can be used by clinicians to target individual patients, and by public health programme planners to target large population groups.

Integrating prevention and promotion programmes for mental health within overall public health strategies will help to avoid deaths, reduce the stigma attached to the persons with mental disorders and improve the social and economic environment.

Is it possible to promote mental health and prevent mental disorders?

Within the spectrum of mental health interventions, prevention and promotion have become realistic and evidence based, supported by a fast-growing body of knowledge from fields as divergent as developmental psychopathology, psychobiology, prevention, and health promotion sciences (WHO, 2002). Prevention and promotion programmes have also been shown to result in considerable economic savings to society (Rutz et al., 1992).

Much can be done to reduce the burdens of mental disorders, avoid deaths and promote mental health in the world.

Mental health promotion

Health promotion is the process of enabling people to gain increasing control over their health and improve it (WHO, 1986). It is therefore related to improving the quality of life and the potential for good health, rather than only an amelioration of symptoms (Secker, 1998). Psychosocial factors influence a number of health behaviours (e.g. proper diet, adequate exercise, and avoiding cigarettes, drugs, excessive alcohol and risky sexual practices) that have a wide-ranging impact in the domain of health (WHO, 2002).

A growing body of cross-cultural evidence indicates that various psychological, social and behavioural factors can protect health and support positive mental health. Such protection facilitates resistance (resilience) to disease, minimizes and delays the emergence of disabilities and promotes more rapid recovery from illness (WHO, 2002). The following studies are illustrative. Breast-feeding (advocated by the joint WHO/UNICEF Baby-Friendly Hospital Initiative, Naylor, 2001) improves bonding and attachment between infants and mothers, and significantly improves child development. Promotive interventions in schools improve self-esteem, life skills, pro-social behaviour, scholastic performance and the overall climate.

Among various psychosocial factors linked to protection and promotion in adults are secure attachment; an optimistic outlook on life, with a sense of purpose and direction; effective strategies for coping with challenge; perceived control over life outcomes; emotionally rewarding social relationships; expression of positive emotion; and social integration.

Photo: © WHO, P. Virot

When can interventions for prevention of mental disorders begin?

Visits by nurses and community workers to mothers during pregnancy and after childbirth, in order to prevent poor child care, child abuse, psychological and behavioural problems in children and postnatal depression in mothers, have proved to be extremely effective on a sustainable basis (Olds et al., 1988). Teaching mothers about early monitoring of growth and development in low-birth-weight babies, along with proper maternal advice, can prevent poor intellectual development (Infant Health and Development Programme, 1990). Early stimulation programmes can enable mothers to prevent the slow development often seen in preterm infants, and improve the physical growth and behaviour of such infants (WHO, 1998). Such programmes can also reduce the number of days spent in hospital (Field et al., 1986), and thus result in economic savings. Nutrient supplements to prevent neuropsychiatric impairment have also been found to be useful. For example, iodine supplementation programmes through iodination of water or salt (recommended by WHO, 1996; 2001) can help prevent cretinism and other iodine-deficiency disorders (Sood et al., 1997; Mubbashar, 1999). Moreover, it may have a positive effect on the intelligence level of even apparently healthy populations living in iodine-deficient areas (Bleichrodt & Born, 1994).

Preventive strategies are useful even during childhood and adolescence

Preventive interventions reduce depression and feelings of hopelessness, aggressive and delinquent behaviour, as well as alcohol, tobacco and drug use, on a sustained basis (Schweinhart & Weikart, 1992; WHO, 1993; Bruene-Butler et al, 1997; Shochet et al, 2001).

Training teachers and parents has been shown to improve detection of problems and facilitate appropriate interventions.

A stitch in time

Psychosocial interventions, such as cognitive-behavioural therapy and family-based group intervention for "high risk" children, prevent the development of anxiety disorders (Dadds et al., 1997) and reduce depressive symptoms and conduct problems (Jaycox et al., 1994). Depression in adolescence has a high risk of recurrence in adulthood, and is also associated with the risk of development of personality problems or conduct disorders.

It is possible to prevent the majority of suicides and suicide attempts among schoolchildren through a comprehensive schools-based prevention programme that includes appropriate modifications to school-based policy, teacher training, parent education, stress management and a life-skills curriculum, along with the introduction of a crisis team in each school (Zenere & Lazarus, 1997).

Veliana, 6 years old, Bulgaria

How can prevention help adults and the elderly?

There is considerable evidence which shows that preventive strategies improve marital, relational and occupational functioning. It is possible to reduce dysfunctional marital communication, sexual difficulties, divorce and child abuse among young couples through education and skills training (Renick et al., 1992; Cowan & Cowan, 1992). Programmes to cope with widowhood and bereavement have been seen to help reduce depressive symptoms and facilitate better adjustment (Vachon et al., 1980). Similarly, studies have shown that stress-management skills and occupational stress-management training for personnel at risk (e.g. nursing personnel, bus drivers, teachers and blue collar workers) can be very useful. It has also be seen that retrenched workers who received adequate counselling coped better, had fewer depressive symptoms and managed to find better jobs (Vinokur et al., 1992). Retrenchment and job loss can cause depression, anxiety and many other problems such as alcoholism, marital stress and child abuse, and can even can lead to suicide.

Physician advice and other forms of brief intervention have been found to be effective in reducing alcohol abuse (Babor & Grant, 1992). Brief interventions have also been tried to reduce smoking (Kottke et al., 1988). Strategies to prevent alcohol and other substance abuse through mass campaigns, including the use of alcohol warning labels, have been successful in raising awareness (MacKinnon et al., 2000). Similarly, community-intervention programmes aimed at women, that involve community coalitions, task forces and support groups, help reduce smoking (Secker-Walker et al., 2000).

The introduction of mandatory bicycle helmet use leads to a substantial reduction in head injuries that can cause neurological and mental disabilities (Cameron et al., 1994). Short cognitive-behavioural programmes for victims of vehicular and industrial accidents (Fecteau & Nicki, 1999; Bryant et al., 1998) are beneficial in the prevention and management of post-traumatic stress disorder.

Prevention of suicidal behaviour

The prevention of suicidal behaviour (both attempted and completed suicide) poses a series of particular challenges at the public health level. On the one hand, subjects at risk of suicidal behaviour cover a wide age range, from early adolescence to later life. On the other hand, the risk of suicidal behaviour varies greatly according to several sociocultural factors (among which age, gender, religion, socioeconomic status) and mental status.

It is also influenced by the availability of methods used for that behaviour. This diversity calls for an integration of different approaches at the population level in order to achieve significant results.

According to the best evidence available (WHO, 1998), the following interventions have demonstrated efficacy in preventing some forms of suicidal behaviour:

- Control of availability of toxic substances (particularly pesticides in rural areas of some Asian countries);
- Detoxification of domestic gas and car exhaustion;
- Treatment of people with mental disorders (particularly depression, alcoholism and schizophrenia);
- Reduction of access to firearms; and
- Toning down of press reports about suicides.

Hoang Gia, 9 years old, Vietnam

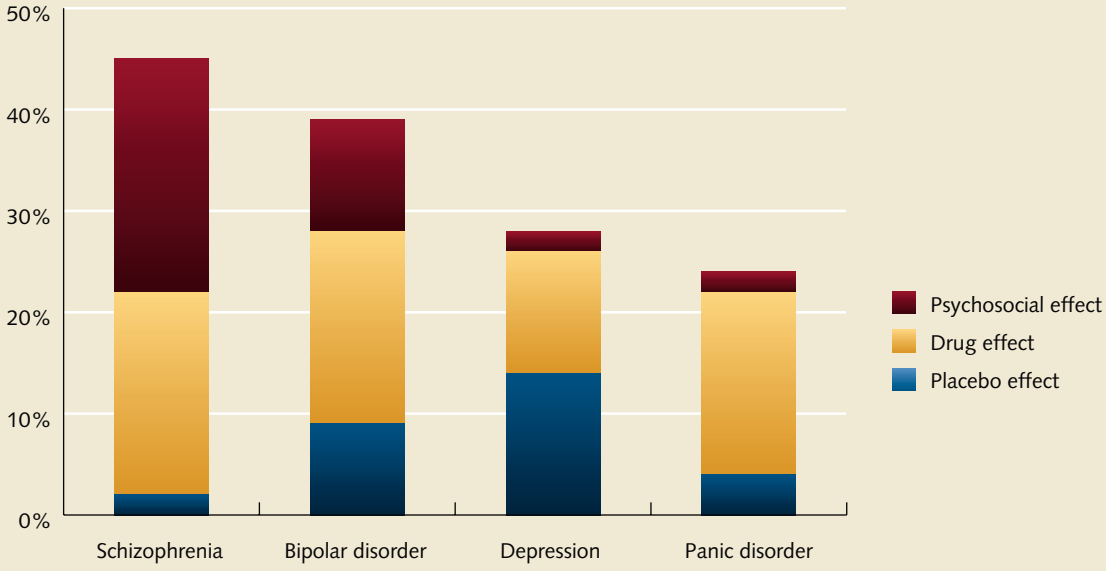
Treatment of mental disorders: effectiveness and cost-effectiveness

The widening recognition of mental health as a significant international public health issue has led to the growing need to demonstrate that investment of resources in service development is not only required, but also worthwhile. Specifically, it is important to collect evidence of effective and appropriate mental health care strategies that are also cost-effective and sustainable. Although the volume of completed studies remains modest, particularly in middle- and low-income countries, there is increasing economic evidence to support the argument that interventions for schizophrenia, depression and other mental disorders are not only available and effective, but are also affordable and cost-effective.

12

Treatment effects on disability

Percent total improvement in disability



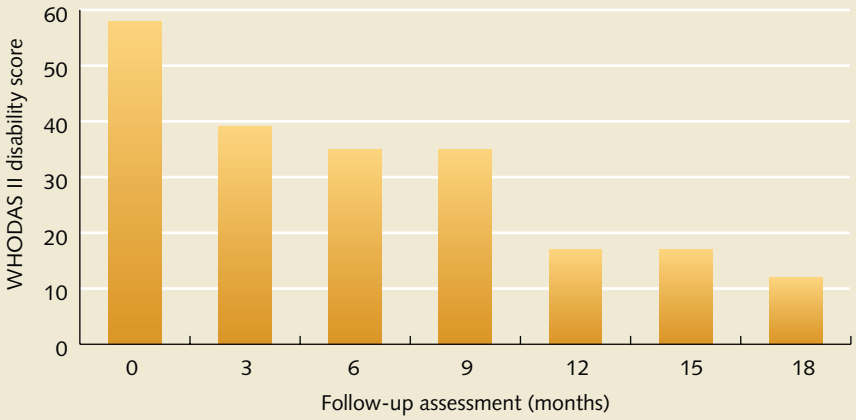
How effective are treatments for burdensome psychiatric conditions?

There is considerable literature concerning the efficacy and effectiveness of a wide range of pharmacological, psychosocial and care management strategies for treating both psychiatric disorders and addiction. Figure 12 on opposite page illustrates the reduction in disability following pharmacological and psychosocial treatment, alone or in combination. As can be seen, the extent of improvement over no treatment at all is as much as 50%. Thus, while currently available interventions do not completely cure the disability associated with these conditions, they have a substantial advantage over no treatment at all, which unfortunately, is often the case. This raises the question of the costs involved in realizing these health improvements.

Figure 13 illustrates the effectiveness of treatment, provided through community outreach care (low-cost drug therapy and basic psychosocial support), on the economic burden and disability of untreated schizophrenia in India; not only did disability improve dramatically, but the overall costs associated with the condition (which included care-giving time by family members) also fell. These effects were sustained over an 18-month follow-up period.

13

Changes in disability following community outreach treatment of untreated schizophrenia in rural India



What are the costs of effective treatment?

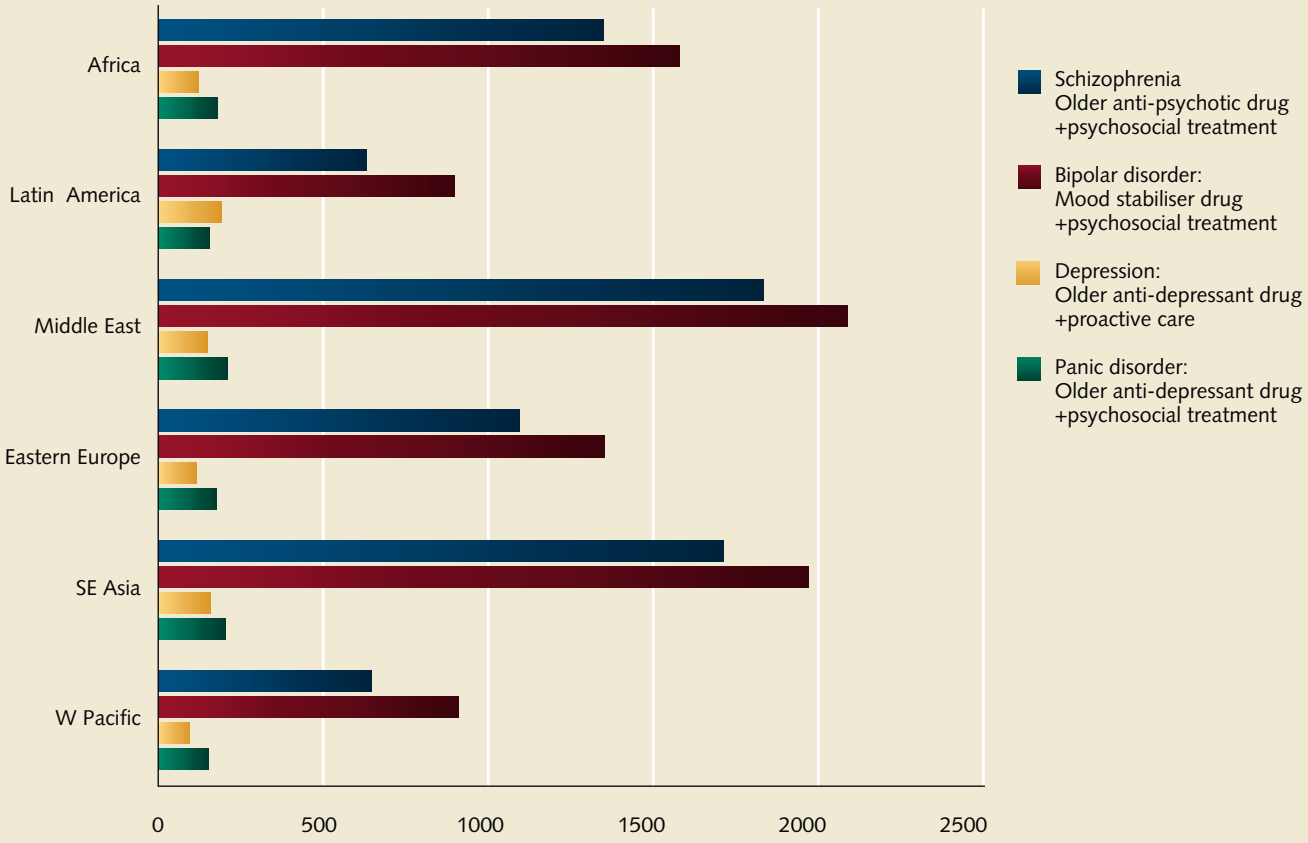
The alarmingly low level of resources available in developing countries to treat mental health problems, relative to the affected population for which the resources are needed, has been highlighted by the WHO ATLAS project (WHO, 2001). The generation of a more evidence-based approach to mental health budgetary planning, resource allocation and service development represents an underdeveloped but much needed component of national mental health policy in developing regions of the world.

WHO has embarked upon the worldwide collection of such an evidence base by means of its WHO-CHOICE project, including estimation of the cost and efficiency of a range of key treatment strategies for burdensome mental disorders. Figure 14 below

14

The annual cost per case (or episode) of evidence-based psychiatric treatment

Cost per treated case (in international dollars, I$)



shows the estimated cost of first-line treatment of schizophrenia and bipolar disorder on a hospital outpatient basis, and also the cost of primary care of depression and panic disorder, based on estimated use of health care resources that would be required to produce the expected reduction in disability. Costs are expressed in international dollars (I$), which take into account the purchasing power of different countries. It is clear that more severe psychiatric conditions such as schizophrenia require substantially greater resource inputs (mainly because a proportion of cases need to be hospitalized or provided with residential care outside hospital). By contrast, the cost of effectively treating an episode of depression is estimated to be in the region of I$ 100–150.

Cost-effectiveness should be just one of several criteria used in the decision-making process for funding prevention/treatment of mental disorders.

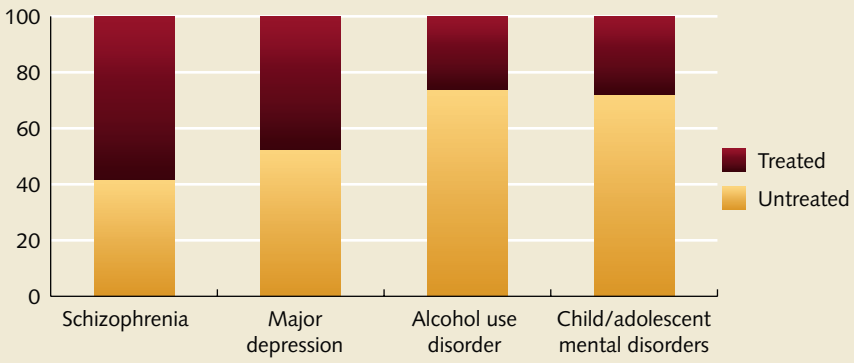
These economic evaluations should be supplemented by other arguments. For example:

- People with mental disorders are more at risk of human rights violations and are more likely to be discriminated against in accessing treatment and care;
- Achievement of physical health targets, such as:
  - Infant and child mortality can be reduced through improved treatment of postnatal depression;
  - HIV/AIDS infection rates for the 17-24 year-old age group are reduced because improved mental health reduces unsafe sex and drug use;
  - There is better adherence to treatments for other ailments (e.g. tuberculosis, HIV/AIDS, hypertension, diabetes and cancer treatments);
- Caregivers benefit from a lower burden of care, which means better quality of life and fewer work days lost, and thus less loss of income;
- Employers benefit from better working environment, reduced absenteeism and higher productivity;
- Governments benefit from less cost-shifting and transfer payments;
- Mental health is a key variable in successful programmes for sustainable development and poverty reduction.

The gap between the burden of mental disorders and resources

15

Treatment gap rates (%) by disorder (world)



Even though mental, brain and substance-use disorders can be managed effectively with medication and/or psychosocial interventions, only a small minority of patients with mental disorders receives even the most basic treatment. Initial treatment is frequently delayed for many years. In developed countries with well-organized health care systems, between 44% and 70% of patients with depression, schizophrenia, alcohol-use disorders and child and adolescent mental illnesses do not receive treatment (Figure 15) in any given year. In developing countries, where the treatment gap is likely to be closer to 90% for these disorders, most individuals with severe mental disorders are left to cope as best they can.

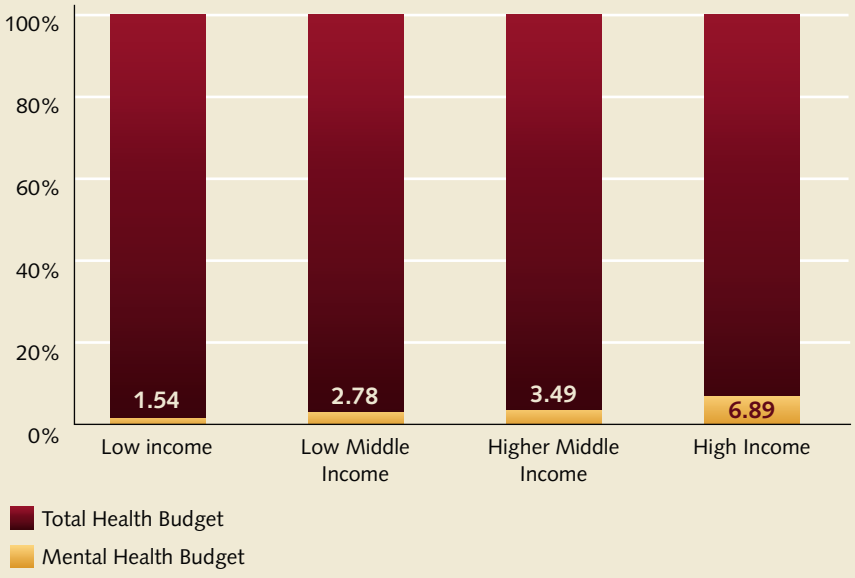
More than 40% of all countries worldwide have no mental health policy and over 30% have no mental health programme. Over 90% of countries have no mental health policy that includes children and adolescents. Out-of-pocket expenditure was the primary method of financing mental health care in many (16.4%) countries. Even in countries where insurance cover is provided, health plans frequently do not cover mental and behavioural disorders at the same level as other illnesses; this creates significant economic difficulties for patients and their families.

Mental health budget in low-income countries: non-existent or inadequate

In spite of the importance of a separate mental health budget within the overall health budget, 32% of countries included in the ATLAS study (WHO, 2001) reported not having a specific governmental budget for mental health. Of those that actually reported having one, 36.3% spent less than 1% of their total health budget on mental health. Countries categorized on the basis of income levels (World Bank classification) differ considerably in terms of the proportion of their governmental budget for mental health to their total health budget (Figure 16). The poorer countries have small health budgets, from which they spend a lower percentage on mental health, resulting in very few resources being available. Poor provision of mental health care results in poor outcomes, avoidable relapses and insufficient rehabilitation.

16

Share of mental health budget in total health budget of countries by income level (%) (World Bank classification)



The relationship between the burden of mental disorders and spending is clearly inappropriate.

A wide gap between the burden of neuropsychiatric disorders and the mental health budget

Mental and behavioural disorders are estimated to account for 13% of the global burden of disease, yet, on average, the mental health budgets of countries constitute only 2% of their total health expenditures (Figure 17).

17

Burden of neuropsychiatric disorders vs budget

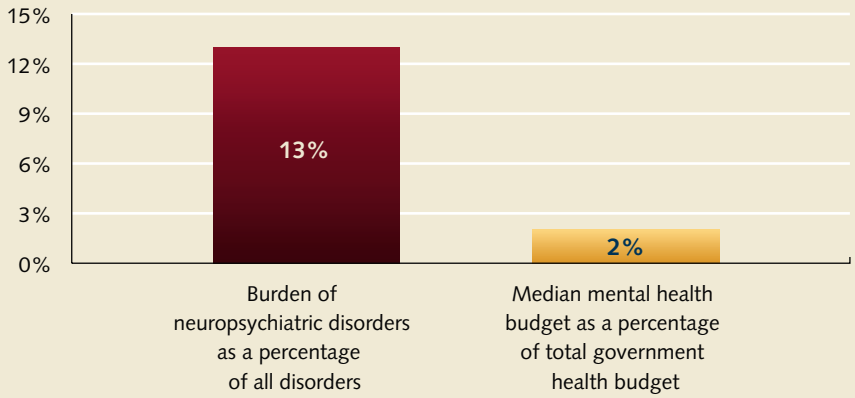


Photo: © A. Mohit

Urgent action is needed to close the treatment gap and to overcome barriers which prevent people from receiving appropriate care.

There are several barriers to people's access to appropriate mental health care

Stigma

Around the world, many people with mental disorders are victimized for their illness and become the targets of unfair discrimination. Access to housing, employment and normal societal opportunities is often compromised.

Discrimination in insurance coverage for mental disorders

In many countries, since mental disorders are not covered by health insurance schemes, many people cannot afford treatment. One-quarter of all countries do not provide disability benefits to patients with mental disorders. One-third of the world's population – 2 billion people – lives in countries that spend less than 1% of their health budgets on mental health.

Lack of drugs

Though 85% of countries have an essential drugs list that countries use as a basis for procuring therapeutic drugs, almost 20% of countries do not have at least one common antidepressant, one antipsychotic, and one antiepileptic in primary care.

Wrong priorities

Too many countries (mainly developed countries) still spend most of their resources on a few large mental asylums, which focus only on a small fraction of those who need treatment; even these institutions generally provide poor quality care and often inhumane conditions and treatment.

Lack of skills at the primary health care level

Too few doctors and nurses know how to recognize and properly treat mental disorders. In 41% of countries there are no mental health training programmes for primary health care professionals.

Lack of rational and comprehensive mental health policies and legislation

- 40% of countries do not have a mental health policy;
- 25% of countries do not have mental health legislation; and
- 30% of countries do not have a national mental health programme.

WHO Global Action Programme (mhGAP)

Year of Mental Health: 2001

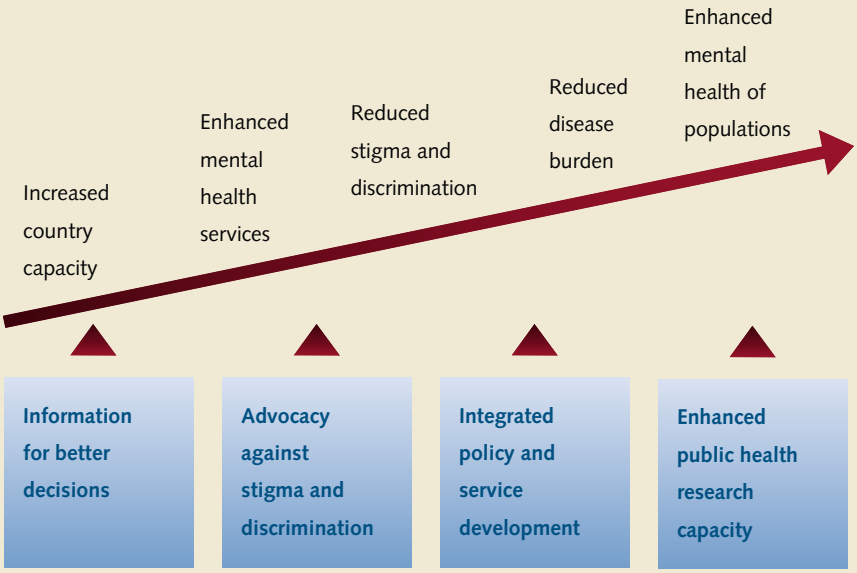
WHO declared 2001 the Year of Mental Health and that year's World Health Day was a resounding success. Over 150 countries organized important activities, including major speeches by political leaders and the adoption of new mental health legislation and programmes.

At the 2002 World Health Assembly, over 130 Ministers responded positively with a clear and unequivocal message: mental health, neglected for too long, is crucial to the overall well-being of individuals, societies and countries, and must be universally regarded in a new light. The theme of the World Health Report 2001 was mental health, and its 10 recommendations have been positively received by all Member States.

As a result of the activities in 2001, the **Mental Health Global Action Programme (mhGAP)** has been created. mhGAP is WHO's major new effort to implement the recommendations of the World Health Report 2001. The programme is based on four strategies (Figure 18) that should help enhance the mental health of populations.

18

Mental Health Global Action Programme (mhGAP): the four core strategies



Advocacy, information, policy and research are the key words underlying WHO's new global mental health programme, which aims at closing the gap between those who receive care and those who do not.

Strategy 1

Increasing and improving information for decision-making and technology transfer to increase country capacity.

WHO is collecting information about the magnitude and the burden of mental disorders around the world, and about the resources (human, financial, socio-cultural) that are available in countries to respond to the burden generated by mental disorders. WHO is disseminating mental health-related technologies and knowledge to empower countries in developing preventive measures and promoting appropriate treatment for mental, neurological and substance-abuse disorders.

Strategy 2

Raising awareness about mental disorders through education and advocacy for more respect of human rights and less stigma.

The World Health Organization is establishing the first all-inclusive global partnership of mental health-related constituencies: the Global Council for Mental Health. It will act as a forum for mental health, stimulating and lending support to activities aimed at promoting implementation of the 10 recommendations of the World Health Report 2001 in all regions. Professional NGOs, family members and consumer groups, leaders of religious groups, parliamentarians, labour and business organizations are all enthusiastic about pursuing activities for the improvement of mental health through this common platform led by WHO.

At the Executive Board meeting in January 2002 a resolution on mental health encouraging continued activity in this area was adopted. The resolution strongly supports the direction of mhGAP and urges action by Member States. The resolution was endorsed unanimously by the World Health Assembly in May 2002.

Strategy 3

Assisting countries in designing policies and developing comprehensive and effective mental health services. The scarcity of resource forces their rational use.

The *World Health Report 2001* and the *Atlas: Mental Health Resources in the World,* have revealed an unsatisfactory situation with regard to mental health care in many countries, particularly in developing countries. WHO is engaged in providing technical assistance to Ministries of Health in developing mental health policy and services. Building national capacity is a priority to enhance the mental health of populations.

WHO has designed a mental health policy and service guidelines to address the wide variety of needs and priorities in policy development and service planning, and a manual on how to reform and implement mental health law.

To put plans into action, WHO is adapting the level and types of implementation to the general level of resources of individual countries. In the particular case of developing countries, where the gap between mental health needs and the resources to meet them is greater, WHO will offer differentiated packages of "achievable targets" for implementation **(Gap Reduction Achievable National Targets/GRANTs)** to countries grouped by at least three levels of resources (low, middle and relatively higher). These packages provide the minimum required set of feasible actions to be undertaken to comply with the 10 recommendations spelt out in the World Health Report 2001. Achievement of the identified targets will influence both health and social outcomes, namely mortality due to suicide or to alcohol/illicit drugs, morbidity and disability due to the key mental disorders, quality of life, and, finally, human rights.

Strategy 4

Building local capacity for public mental health research in poor countries.

Besides advocacy, policy assistance and knowledge transfer, mhGAP formulates in some detail the active role that information and research ought to play in the multidimensional efforts required to change the current mental health gap at country level.

WHO is developing several projects and activities to promote this strategy at country level, including a research fellowship programme targeting developing countries. A project on the cost-effectiveness of mental health strategies is being implemented in selected countries to generate real estimates on the costs and benefits of mental health interventions. These estimates will then be used to enhance mental health services at country level.

Much can be done; everyone can contribute to better mental health

Interventions can be implemented immediately and widely with existing knowledge and technology. The returns in terms of reducing disability and preventing premature death are enormous.

Prevention of childhood mental problem

Mother & child care
Adequate care during pregnancy and around childbirth prevents brain and mental disorders. Early childhood social stimulation also ensures better psychosocial development and prevents emotional and conduct disorders.

School-based programmes
Psychosocial interventions by teachers and counsellors can prevent depression, aggressive behaviours and substance abuse among students.

Suicide prevention

Media interventions
Mental health professionals can initiate codes of conduct for the mass media to ensure that they do not glamorize instances of suicide, so as to prevent further suicides in communities.

Restriction of means to commit suicide
It has been demonstrated that restrictions on the availability of means to commit suicide (e.g. pesticides) can be effective in their prevention. Laws and regulations could curb the availability of dangerous substances.

Prevention of alcohol-related problems

Higher taxation
Higher taxes on alcoholic beverages uniformly bring down the consumption levels, leading to substantial reduction in alcohol-related problems.

Brief interventions
Models of brief interventions applied within primary health care settings have proved to be effective for most people with alcohol-related problems (25% reduction in alcohol consumption).

Depression

Early identification of people suffering from depressive disorders
We know that even in high-income countries almost 50% of those suffering from depression are not identified. Early identification means more effective treatment and avoidance of disability and death by suicide.

Care in primary health services
Depressive disorders can be effectively treated, in most instances, with common and inexpensive medicines and simple psychosocial interventions. This is possible within primary health services with the provision of some basic training and appropriate medicines.

Schizophrenia

Maintenance on antipsychotic medicines
Once this disorder is diagnosed and treatment is begun, most patients need continued follow-up and regular medicines. This costs very little, but results in substantial reduction in disability and improvement in quality of life.

Involvement of family in care
Families are the most significant partners in the care of chronic mental disorders. Simple interventions delivered to the families can enhance the quality of life both of the patient and of the whole family. And relapse can be prevented.

Mental retardation

Iodinization of salt
Using iodized salt is the single most effective prevention activity in areas deficient in iodine. Millions of children can escape long-lasting intellectual deficits by this most inexpensive public health measure.

Training to parents
Parents can help children with mental retardation to achieve their full potential for development. Simple training to parents can go a long way in ensuring the best environment for children with mental retardation.

Epilepsy

Anti-stigma campaigns
The biggest barrier to treatment for epilepsy is stigma. Campaigns against stigma result in a larger proportion of those affected getting much-needed treatment as well as reintegration into schools and their communities.

Availability of medicines
Antiepileptic medicines cost very little, but their availability within health care services is limited. Ensuring regular availability of these medicines makes treatment possible, even in the poorest countries: up to 70% of newly diagnosed cases can be successfully treated.

Human rights

Legislation should be modernized. Monitoring of human rights violations should be put in place. Quality of basic care in psychiatric settings should be improved. All this will ensure a better quality of life and more dignity for patients. A substantial component of interventions for mental disorders is that of enabling patients to fully enjoy their rights of citizenship.

Everyone can contribute

References

Albertyn C, McCann M (1993). *Alcohol, Employment and Fair Labour Practice.* Cape Town, Juta.

Babor TF, Grant M (1992). *Project on identification and management of alcohol-related problems. Report on Phase II: A randomized clinical trial of brief interventions in primary health care.* Geneva, World Health Organization.

Berto P et al. (2000). Depression: Cost-of-illness studies in the international literature: A review. *The Journal of Mental Health Policy and Economics*, 3: 3-10.

Birnbaum HD, Greenberg PE, Barton M (1999). Workplace burden of depression: A case study in social functioning using employer claims data. *Drug Benefits Trends,* 11: 6BH-12BH.

Bleichrodt N, Born MP (1994). A meta-analysis of research on iodine and its relationship to cognitive development. In: Stanbury, JB, ed. *The Damaged Brain of Iodine Deficiency*. New York, Cognizant Communication Corporation: 195-200.

Bolton W, Oakley K (1987). A longitudinal study of social support and depression in unemployed men. *Psychological Medicine,* 17(2): 453–460.

Bruene-Butler L et al. (1997). The improving social awareness social problem-solving project. In: Albee GW, Gullota TP, eds., *Primary Prevention Works.* Thousand Oaks, CA, Sage.

Bryant RA et al. (1998). Treatment of acute stress disorder: A comparison of cognitive-behavioural therapy and supportive counselling. *Journal of Consulting & Clinical Psychology,* 66: 862–866.

Cameron MH et al. (1994). Mandatory bicycle helmet use following a decade of helmet promotion in Victoria, Australia: An evaluation. *Accident Analysis & Prevention,* 26: 325–37.

Conti DJ, Burton WN (1994). The economic impact of depression in a workplace. *Journal of Occupational Medicine,* 36: 988.

Cowan C, Cowan P (1992). *When partners become parents: The big life-change for couples.* New York, Basic Books.

Dadds MR et al. (1997). Prevention and early intervention for anxiety disorders: A controlled trial. *Journal of Consulting & Clinical Psychology,* 65: 627–635.

Department of Trade and Industry, South Africa (1997). *Liquor Policy Aper and Liquor Bill (Government Gazette N° 18135).* Pretoria, Government Printer.

Dooley D, Catalano R, Wilson G (1994). Depression and unemployment: Panel findings from the epidemiologic catchment area study. *American Journal of Community Psychology,* 22(6): 745–765.

EAP Seminar (2002). *Mental Health Promotion and Drug Prevention in the Workplace.* Organized by the Department of Mental Health, Thailand, Bangkok.

Fecteau G, Nicki R (1999). Cognitive behavioural treatment of post traumatic stress disorder after motor vehicle accident. *Behavioural & Cognitive Psychotherapy,* 27: 201–214.

Field TM et al. (1986). Tactile/kinesthetic stimulation effects on preterm neonates. *Paediatrics,* 77: 654–658.

Goldberg RJ, Steury S (2001). Depression in the workplace: Costs and barriers to treatment. *Psychiatric Services,* 52 (12): 1639, December.

Harwood H (2000). *Updating estimates of the economic costs of alcohol abuse in the United States: Estimates, update methods, and data*. Report prepared by the Lewin Group for the National Institutes on Alcohol Abuse and Alcoholism.

Infant Health and Development Programme (1990). Enhancing the outcomes of low birthweight premature infants: A multi-site randomized trial. *JAMA,* 1990, 263: 3035–3042.

International Labour Office (ILO) (2000). *Mental Health in the Workplace*. (Document prepared by Phyllis G, Liimatainen, M-R), ILO, Geneva.

Jaycox LH et al. (1994). Prevention of depressive symptoms in school children. *Behaviour Research & Therapy,* 32: 801–816.

Jones S, Casswell S, Zhang JF (1995). The economic costs of alcohol-related absenteeism and reduced productivity among the working population of New Zealand. *Addiction,* 90 (11): 1455–1461.

Kessler RC, Turner JB, House JS (1989). Unemployment, reemployment, and emotional functioning in a community sample. *American Sociological Review,* 54(4): 648–657.

Kessler RC et al. (1995). Social consequences of psychiatric disorders, I: Educational attainment. *American Journal of Psychiatry,* 152(7): 1026–1032.

Kessler RC, Frank RG (1997). The impact of psychiatric disorders on work loss days. *Psychological Medicine,* 27(4): 861–873.

Knapp MRJ, Almond S, Percudani M (1999). Costs of schizophrenia. In: Maj M, Sartorius N (eds.). *Evidence and Experience in Psychiatry (Volume 1).* London, John Wiley and Sons.

Knapp MRJ (2003). Paper presented at the seminar on Mental Health Economics: new European dimension, Madrid, 03 April 2003.

Kottke TE et al. (1988). Attributes of successful smoking cessation interventions in medical practice: A meta-analysis of 39 controlled trials. *JAMA,* 259(19): 2883–2889.

MacKinnon D et al. (2000). The alcohol warning and adolescents: 5-year effects. *American Journal of Public Health,* 90: 1589-1594.

Marcotte DE, Wilcox-Gok V (2001). Estimating the employment and earnings costs of mental illness: Recent developments in the United States. *Social Science & Medicine,* 53 (1) 21-27.

Mark T et al. (2000). Spending on mental health and substance abuse treatment, 1987-1997. *Health Affairs,* July/August.

Maughan B, Rutter M (1998). Continuities and discontinuities in antisocial behaviour from childhood to adult life. In: Ollendick TH, Prinz RJ (eds.), *Advances in Clinical Child Psychology.* New York, Plenum.

McAlpine D, Warner L (2002). *Barriers to Employment among Persons with Mental Illness: A Review of the Literature*. Working paper, Disability Research Institute, University of Illinois at Urbana-Champaign, USA.

Mubbashar MH (1999). Mental health services in rural Pakistan. In: Tansella M, Thornicroft G (eds.), *Common Mental Disorders in Primary Care.* London, Routledge.

Naylor AJ (2001). Baby-Friendly Hospital Initiative. Protecting, promoting and supporting breast-feeding in the twenty-first century. *Paediatric Clinics of North America,* 48: 475-483.

NHS Executive, Department of Health (United Kingdom) (1996). *Burdens of disease: a discussion document.* London, Department of Health.

Olds DL et al. (1988). Improving the life-course development of socially disadvantaged mothers: A randomized trial of nurse home visitation. *American Journal of Public Health,* 78: 1436-1444.

Patel A, Knapp M (1997). *The cost of mental health: Report to the Health Education Authority*. Working paper, Centre for Economics of Mental Health, Institute of Psychiatry. London.

Patel V, Kleinman A (2003). Poverty and common mental disorders in developing countries. *Bulletin of the World Health Organization,* Geneva, 81(8).

Renick MJ, Blumberg SL, Markman HJ (1992). The Prevention and Relationship Enhancement Programme (PREP): An empirically based preventive intervention program for couples. *Family Relations,* 41: 141-147.

Rice D et al. (1990). *The Economic Costs of Alcohol and Drug Abuse and Mental Illness*, Publication No. (ADM) 90-1694, Alcohol, Drug Abuse and Mental Health Administration, Rockville.

Rouse BA (ed) (1995). *Substance Abuse and Mental Health Statistics Sourcebook.* (DHHS Publication No. SMA 95-3064). Washington, DC, U.S. Government Printing Office.

Rutz W et al. (1992). Cost-benefit analysis of an educational program for general practitioners given by the Swedish Committee for Prevention and Treatment of Depression. *Acta Psychiatrica Scandinavica,* 85: 457-464.

Schweinhart LJ, Weikart DP (1992). High/Scope Perry Preschool Program outcomes. In: McCord J, Tremblay RE (eds.), *Preventing Antisocial Behaviour: Interventions From Birth Through Adolescence.* New York, Guilford Press: 67-86.

Secker J, 1998. Current conceptualizations of mental health and mental health promotion. *Health Education Research*, 13: 57-66.

Secker-Walker R et al. (2000). Helping women quit smoking: Results of a community intervention program. *American Journal of Public Health,* 90: 940-946.

Shochet IM et al. (2001). The efficacy of a universal school-based program to prevent adolescent depression. *Journal of Clinical Child Psychology,* 30: 303-15.

Simon GE et al. (2000). Recovery from depression, work productivity, and health care costs among primary care patients. *General Hospital Psychiatry,* 22(3): 153-162.

Sood A et al. (1997). Relevance and importance of universal salt iodinization in India. *The National Medical Journal of India,* 10: 290-293.

Stephens T, Joubert N (2001). The economic burden of mental health problems in Canada. *Chronic Diseases in Canada,* 22(1): 18-23.

Steyn E (1996). Women and Trauma. Medical Research Council. *Trauma Review,* 4(2) 1-2.

Université Laval (2002). *La santé mentale au travail*. Report by Université Laval, Canada.

Vachon MLS et al. (1980). A controlled study of self-help interventions for widows. *American Journal of Psychiatry,* 137: 1380-1384.

Van Kralingen et al. (1991). *Alcohol and the injured driver: The "PODDER" project conducted at the Groote Schuur Hospital trauma unit*. Technical Report DPVT/170. Pretoria: CSIR.

Vinokur AD, Schul Y, Price RH (1992). *Demographic assets and psychological resources in the reemployment process: Who benefits from the JOBS intervention for the unemployed?* Working Paper, Michigan Prevention Research Centre. Institute of Social Research. University of Michigan, USA.

WHO-CHOICE (2003). *Cost-effectiveness of interventions for reducing the burden of mental disorders: A global analysis (WHO-CHOICE).* GPE Discussion Paper (prepared by Chisholm D), Geneva, World Health Organization.

World Health Organization (1986). *Ottawa Charter for Health Promotion.* Geneva.

World Health Organization (1993). *Life Skills Education In Schools*. Geneva, WHO/MNH/PSF/93.7A.Rev.2.

World Health Organization (1996). *Prevention and control of iodine deficiency disorders.* Resolution of the 49th World Health Assembly of WHO. Geneva, WHA49.13.

World Health Organization (1998). *Improving mother/child interaction to promote better psychosocial development in children.* Geneva, WHO/MSA/MHP/98.1.

World Health Organization (2001). *World Health Report 2001,* Geneva.

World Health Organization (2002). *World Health Report 2002,* Geneva.

World Health Organization (2002). *Strengthening mental health.* Resolution of the Executive Board of the WHO. Geneva. EB109.R8.

World Health Organization (2002). *Mental Health Policy and Service Guidance Package: Workplace Mental Health Policies and Programmes.* Draft document. Geneva, World Health Organization, Department of Mental Health and Substance Dependence. (unpublished document).

Zenere FJ 3rd, Lazarus PJ (1997). The decline of youth suicidal behaviour in an urban, multicultural public school system following the introduction of a suicide prevention and intervention program. *Suicide & Life-Threatening Behaviour,* 27: 387-402.

For more information

Department of Mental Health and Substance Dependence

World Health Organization
Avenue Appia 20
CH-1211 Geneva 27
Switzerland

Tel: +41 22 791 21 11
Fax: +41 22 791 41 60

E-mail: mnh@who.int
Website: www.who.int/mental_health

Addresses of WHO Regional Offices

WHO Regional Office for Africa

Cité du Djoué
PO Box 06
Brazzaville
Congo

Tél: +47 241 39100
+242 8 39100

Fax: +47 241 39501
+242 8 39501

E-mail: regafro@afro.who.int

Pan American Health Organization/WHO Regional Office for the Americas

525, 23rd Street, NW
Washington, DC 20037
USA

Tel: +1 202 974 3000
Fax: +1 202 974 3663

E-mail: postmaster@paho.org

WHO Regional Office for the Eastern Mediterranean

WHO Post Office
PO Box 7608
Cairo 11371
Egypt

Tel: +20 2 670 2535
Fax: +20 2 670 2492

E-mail: PIO@emro.who.int

WHO Regional Office for Europe

8, Scherfigsvej
2100 Copenhagen Ø
Denmark

Tel: +45 39 17 17 17
Fax: +45 39 17 18 18

E-mail: postmaster@euro.who.int

WHO Regional Office for South-East Asia

World Health House
Indraprastha Estate
Mahatma Gandhi Road
New Delhi 110 002
India

Tel: +91 11 2337 0804
Fax: +91 11 2337 0197

E-mail: PANDEYH@whosea.org

WHO Regional Office for the Western Pacific

PO Box 2932
1000 Manila
Philippines

Tel: +63 2 528 8001
Fax: +63 2 521 1036

E-mail: Postmaster@who.org.ph

Evelyn Livia, 9 years old, Indonesia

ISBN 92 4 156257 9

World Health Organization

Department of Mental Health and Substance Dependence

Avenue Appia 20
1211 Geneva 27
Switzerland

Tel: +41 22 791 21 11
Fax: +41 22 791 41 60

E-mail: mnh@who.int
Website: www.who.int/mental_health