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Mental health and the global agenda: core conceptual issues

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Introduction

This is the first in a series of four papers examining mental health and the global agenda. The series as a whole addresses three broad themes. First, there are significant opportunities to be gained through public policies that promote mental health and prevent mental disorders to the greatest extent possible. Better mental health contributes to the promotion of healthy development and achievement of educational, social and economic goals, as well as the avoidance of both communicable and non-communicable health problems and the consequent premature mortality. Second, there are also potential significant social and economic gains to be made through public policies that recognise and address the burden of mental disorders. Third, public policies need to prepare for the fact that in many countries mental disorders are likely to rise through a range of different factors including population growth and ageing, marital and family breakdown, an increasing number of orphans and child-headed households, migration both from rural to urban areas within a country and across international borders, changing patterns of work, climate change, the risk of debt and increased income disparity and alcohol

and substance abuse. Poor mental health will further impact disadvantageously on physical health, and on broader social and economic goals.

In addressing these themes policy makers face many challenges. Intersectoral responses are needed to look at the links between mental health, poverty and economic performance and to help provide opportunities to draw more people into education, employment, entrepreneurship and other economic activity. As populations grow and age, healthcare systems will need to be able to adapt to more efficiently address mental disorders and counter the increased risk of co-morbid physical health problems. Policy makers may also wish to pay particular attention to specific 'at-risk groups', such as children. The social and educational impacts of poor mental health can be substantial, persisting into adulthood; policy makers may wish to look at different ways of preventing and tackling these long-term impacts.

In order to consider these issues in more detail, it is first of all important to clarify key concepts and linkages in the field. This first paper addresses core conceptual issues, with subsequent papers in the series addressing social, political and economic

challenges,¹ international and national policy challenges² and health system challenges.³

Conceptualising mental health

Mental health is a term which is used in a number of different ways. Whilst the main focus of this paper is on tackling mental disorders, we also discuss the vitally important concept of positive mental health.

Positive mental health may be conceptualised as including: a positive sense of wellbeing; individual resources including self-esteem, optimism and sense of mastery and coherence; the ability to initiate, develop and sustain mutually satisfying personal relationships; and the ability to cope with adversity (resilience). Together, these enhance an individual's capacity to contribute to family and other social networks, the local community and society at large. Thus, mental health is more than just the absence of symptoms or distress. It refers to a positive sense of wellbeing and a belief in our own worth and the dignity and worth of others.

Positive mental health includes the capacity to perceive, comprehend and interpret our surroundings, to adapt to them and to change them if necessary, to think and speak coherently and to communicate with each other. It also affects our ability to cope with change, transition, and life events such as the birth of a child, unemployment, bereavement or physical ill health. Thus, mental health and physical health are closely interlinked and are both essential components of general health in the individual. Together, they are an indivisible part of public health. Positive mental health has an important societal value, contributing to the functioning of society, including overall productivity. It is also an important resource for individuals, families, communities and nations, contributing to human, social and economic capital. Indeed the new term 'mental capital' has now been coined to cover our conceptual understanding of what might be called 'the bank account of the mind', comprising intellectual and emotional resources which can be built up or depleted or damaged through life.⁴ Collective mental capital is clearly important for nations seeking successful development.

Mental disorder is not simply an absence of good mental health. Psychological distress is common: it affects most people when they experience difficult situations in life associated with various life situations, events and problems, and usually resolves quickly. However, there are also specific recognisable forms of mental illness, which are relatively common in the general population.

The most important categories of mental disorders are common conditions (depression, anxiety, phobias and obsessive compulsive disorders – comprised of constellations of low mood, fatigue, irritability, poor concentration, impaired sleep, appetite and libido, low self-esteem, feelings of worthlessness, suicidal ideation, palpitations, trembling, feelings of unreality, a fear of dying and repetitive and compulsive thoughts and actions); psychosis (severe mental disorders involving disturbances in perceptions, beliefs and thought processes – largely schizophrenia and bipolar disorder); substance abuse (alcohol and drugs) and dementia (largely Alzheimer's disease, vascular dementia and HIV-related dementia).

Common neurological disorders such as epilepsy and Parkinson's disease also tend to be considered together with mental disorders in terms of service planning and human resource development, as neurological services tend to be even more scarce than psychiatric services. Learning difficulties are also common. Rates of severe mental retardation are around 3.5 per 1000 in rich countries and between three and 22 per 1000 in poor countries.⁵

In 1990 the World Bank estimated that neuro-psychiatric disorders formed 10.5% of the global burden of disease (disability adjusted life year (DALYs)) and suggested that this could rise to 15% by 2020.⁶ In fact they have already reached 13%.⁷ They comprise five of the ten leading causes of disability and account for 28% of years of life lived with a disability. Depression alone is expected by 2030 to rise from the fourth to the second leading cause of global disease burden as measured by DALYs (see Table 1). It will be the leading cause of disability in high-income countries, second only to HIV/AIDS in middle-income countries and third only to HIV/AIDS and perinatal conditions in low-income countries.^{8,9} Depression contributes more than 10% of years of life lived with a disability, while suicide (the majority of which is linked with depression) is the tenth leading cause of death.¹⁰ These figures do not take account of family burden or wider social and economic impacts.

Prevalence rates are estimated to be around five to 15% for common mental disorders and 0.5% for psychosis.^{5,11} Some disorders are short-lived while others pursue a chronic course. Half of common mental disorders last for longer than two years unless they are adequately treated. Two-thirds of people with psychosis experience a relapsing or deteriorating course of illness unless adequately treated. Substance and alcohol abuse rates are very variable depending on culture, religion and ease of access to harmful substances.

Progressive organic diseases of the brain (dementia) have been found to affect around 5% of people aged over 65 in some Asian and Latin American countries,

Table 1 DALYs attributable to neuropsychiatric disorders in WHO regions, estimates for 2004, 2008, 2015, 2030

Region	Year	Cause of disease and DALYs					
		Group II: Non-communicable disease	Neuro-psychiatric disorders	%	Group III: Injuries	Suicide	%
Africa	2004	79 142	19 403	25	29 658	1231	4
	2008	84 996	20 971	25	32 113	1334	4
	2015	95 915	24 030	25	37 164	1538	4
	2030	127 958	31 855	25	50 319	2085	4
The Americas	2004	98 884	33 759	34	19 805	1625	8
	2008	102 139	34 875	34	19 873	1672	8
	2015	109 073	36 652	34	20 748	1807	9
	2030	120 858	39 714	33	22 879	2063	9
Eastern Mediterranean	2004	58 551	15 966	27	21 001	1092	5
	2008	62 129	17 069	27	21 840	1132	5
	2015	69 160	18 888	27	23 613	1199	5
	2030	87 342	22 406	26	27 048	1287	5
Europe	2004	116 097	28 932	25	19 973	3092	15
	2008	112 380	28 321	25	17 325	2905	17
	2015	107 331	27 406	26	14 283	2642	18
	2030	98 156	25 800	26	10 387	2322	22
South-east Asia	2004	195 285	52 279	27	62 818	7207	11
	2008	204 272	54 637	27	61 560	7109	12
	2015	220 787	58 495	26	60 461	6971	12
	2030	257 143	64 288	25	56 304	6213	11
Western Pacific	2004	182 370	48 561	27	33 992	5303	16
	2008	185 166	49 136	27	31 217	4990	16
	2015	194 597	49 722	26	28 568	4773	17
	2030	208 183	49 017	24	24 121	4461	18
World	2004	730 329	198 901	27	187 248	19 550	10
	2008	751 080	205 009	27	183 929	19 141	10
	2015	796 865	215 193	27	184 838	18 930	10
	2030	899 639	233 081	26	191 059	18 430	10

while consistently lower rates of between 1% and 3% have been reported in India and sub-Saharan Africa.¹² Dementia is expected to become increasingly common in low- and middle-income countries as overall life expectancy increases.¹³ Moreover, as much as 90% of the burden of HIV/AIDS is in low- and middle-income countries; HIV-related dementia is another problem to be faced in countries with high rates of HIV that are still experiencing worsening epidemics. In high-income countries, up to 30% of people with late-stage AIDS are affected by HIV associated dementia.¹⁴

What is the link between mental disorders, mortality and disability?

Assessing magnitude and trends in mortality from mental disorders is bedevilled by poor data. Co-morbid physical health problems are a major cause of premature death in people with mental disorders. This increased risk is not captured in routine data collection. People living with severe mental illness, including depression, schizophrenia and bipolar disorders, are between one-and-a-half and three times

more likely to die in any one year compared to the general population. One meta-analysis reported standardised mortality ratios for people with mental disorders of 203 for infectious diseases, 120 for cancers, 142 for endocrine diseases, 232 for circulatory diseases, 242 for respiratory diseases, 255 for digestive diseases, 203 for genitourinary diseases, 984 for suicide and 275 for other trauma.¹⁵ Overall, approximately 60% of excess mortality among people with mental disorders is due to physical health problems, with the most common cause of death at all ages being cardiovascular disease. The increased risk of mortality from depression alone is similar to that from smoking.¹⁶

It is important to remember that it is not just the increased risk of mortality which is of concern, but also the increased risk of chronic co-morbidities, with their associated social and economic impacts. Studies in high-income countries indicate that people with schizophrenia are three times as likely to have diabetes and twice as likely to have cardiovascular disease as the general population.^{17,18} People with depression have a 50% greater risk of cardiovascular disease,^{19,20} and a 60% increased risk of diabetes;²⁰ again equivalent to the risk associated with smoking. The risk of obesity can be twice as high as in the general population.²¹

Much of this data, however, is from high-income countries; much less is known about the links between poor physical health and mental health in low- and middle-income countries. In the Harris and Barraclough¹⁵ review only one-fifth of studies were from low-income countries, where the premature mortality in people with mental disorders may reasonably be expected to be even higher for infectious diseases. However, the World Mental Health Survey that collected data from all regions of the world found the same relationships between mental disorders and other non-communicable disorders.²²

More information from the developing world is now becoming available. For example, in Zanzibar over the last 20 years the likelihood of dying in the mental hospital in the year of a cholera epidemic is 50%, compared with 25% in a year without a cholera epidemic.^{23,24} There is a link between depression and premature mortality, when co-morbid with coronary heart disease (CHD) following a stroke,^{23,25} and from HIV and AIDS when associated with depression.^{26,27} Looking at another communicable disease, tuberculosis (TB), one recent study from Pakistan reported that almost 50% of 108 individuals being treated for TB also had co-morbid depression or anxiety disorders.²⁸

Suicide globally is a major cause of death. Many poor countries do not have good routine registration of death and cause of death and few post-mortem facilities. As in some high-income countries, suicide

data may often be collected by the police rather than by health authorities, which may lead to inconsistencies in reporting. Significant underreporting may also occur, due to the taboo, stigma, religious views and illegality of suicide in some countries. In Africa official suicide rates are thus very low. However, careful studies show that suicide rates in Sub-Saharan Africa (SSA) can be similar to those in some high-income countries.^{29,30} For example, the rates found in the Morogoro region of Tanzania for women aged between 16 and 45 are identical to those for the same gender and age range in England.³¹

Premature death from suicide has many adverse consequences; in addition to the direct loss of life there is the consequence for the family of the loss of a breadwinner or parent, the long-standing psychological trauma for children, friends and relatives and the loss of economic productivity for the nation. In the USA, it is estimated that up to 90% of completed suicides are associated with a mental disorder,³² and patterns are likely to be similar globally. Psychological autopsy studies have demonstrated that the so-called 'rational suicide' is extremely rare. In UK epidemiological studies, over 99% of those experiencing suicidal ideation have a mental disorder.³³ A population-based assessment of women in Afghanistan also reported high levels of major depression, symptoms of anxiety and thoughts of suicide.³⁴ Subsequent studies have found similar results.³⁵ It should also not be forgotten that there can be many long-term adverse impacts of non-fatal suicidal events; injuries sustained may lead to disability, need for family care and loss of income. Without action, risks of future suicidal events can also remain high.³⁶

How much of this mortality can be prevented?

Much of this premature mortality is potentially avoidable as cost-effective treatments and novel care approaches now exist to effectively address mental illnesses. Premature physical mortality of people with mental illness can be greatly reduced by health professionals taking a multi-axial and non-stigmatising approach to diagnosis and treatment, so that people with mental illness do not have their physical illnesses neglected. It is also important that people with chronic and/or stigmatised mental disorders have access to screening for physical health problems. Such neglect is very visible in the health systems of some countries at present, where it is common to find people with mental illness dying of readily treatable conditions such as pneumonia or diarrhoea.

Serious attention needs to be paid to ongoing physical health promotion and physical health care of people with mental illness, making use of interventions that are demonstrated to be cost-effective at individual and community levels, although the actual evidence on the impact on physical health in low- and middle-income countries remains much lower than in richer countries. Targeted health promotion policies need to be considered for people with severe mental illness; people with mental illness need specific information about exercise, smoking, nutrition and safe sex. There is also a need for better concordance with treatments for physical health problems such as TB.

In respect of suicide, much is known about contributing factors and pathways to suicide. Effective interventions include the better recognition and management of individuals at risk of suicide within primary care systems, as well as restrictions on access to means of suicide,³⁷ e.g. lockable boxes for the storage of pesticides,^{38,39} or regulations restricting the sales of pesticides, as in Sri Lanka.⁴⁰ In addition to information on specific interventions, information on national suicide prevention strategies is available in many high-income countries. However, outside Sri Lanka efforts to develop suicide preven-

tion strategies in low-income countries have been limited,⁴¹ despite a call by the United Nations (UN) for each country to have a national suicide prevention strategy,⁴² and for health, educational, social and criminal justice professionals to be aware of the factors leading to suicide and their respective roles in prevention.⁴³ Core components for national strategies to address suicide are set out in Box 1.⁴⁴ More country specific information could be collected to help fine tune local policies.

Mental disorders: morbidity and causes

Morbidity from mental disorders arises from both the symptoms themselves and their accompanying disability. The prevalence of the different broad categories of illness in SSA is of the order of between 5% and 20% for common mental disorders and 0.5% and 1% for psychosis.⁵ Studies have shown that mental disorders are accompanied by considerable social disability.⁴⁵

Box 1 Core components of National Suicide Prevention Strategies⁴¹

Steps in the pathway to suicide	Specific actions to prevent suicide
Factors causing depression	Policy on employment, education, social welfare, housing, child abuse, children in care and leaving care, substance abuse, media guidance, public education School mental health promotion (coping strategies, social support, bullying) Workplace mental health promotion Action on alcohol and drugs Action on physical illness and disability
Depressive illness and other illnesses with depressive thoughts	Support of high-risk groups (occupational, bereaved, unemployed, painful disabling illnesses etc.) Professional training about prevention, prompt detection, assessment, diagnosis and treatment in primary care Improved access to mental health services for complex cases
Suicidal ideation	Good risk assessment and management in primary care
Suicidal plans	Taboo enhancement Good practice guidelines on looking after suicidal people in primary and secondary care
Gaining access to means of suicide	Controlling access to means of suicide, e.g. guns, pesticides, paracetamol, chloroquine Reduction of disinhibiting/facilitating factors such as alcohol
Use of means of suicide	Prompt intervention Good assessment and follow up of deliberate self-harm and suicide attempts
Aftermath	Audit and learn lessons for prevention Responsible media policy Essential research and development

A recent review suggests the prevalence rate of common mental disorders in Africa ranges between 8% and 43%, depending on the instrument used and population sampled.⁵ Earlier, Tafari and colleagues found a prevalence of 11.2% for neurosis in Ethiopia,⁴⁶ Abas and Broadhead reported a rate of 30% for annual depression among women in urban Zimbabwe,⁴⁷ and Alem and colleagues found rates of 17% for depression in Butagira, Ethiopia.⁴⁸ More recently, the lifetime rate of any disorder across 17 countries was found to be between 12% and 47%.¹¹ Past-year rates in Nigeria are comparable to UK findings, where the prevalence of any anxiety and any mood disorder was 4.1% and 1.3% respectively.⁴⁹ Amoran and colleagues reported an overall rate of depression of 5.2% across an urban and rural community in Nigeria.⁵⁰ In Uganda, a survey of outpatient attendees found a rate of between 8% and 50% for depression, with an average of 28%.⁵¹ Alcohol abuse is on the increase in SSA.⁵²

The causes of mental ill health can be social, psychological and physical. Social factors include life events, for example: bereavement, job loss and in some cases severe trauma (for instance due to conflict or natural disasters); chronic social adversity (e.g. unemployment, poverty, illiteracy, child labour or violence); and a lack of social support/small social networks. Psychological factors include poor coping skills and low self-esteem. Physical factors include poor nutrition, infection, physical trauma, endocrine and genetic factors, as well as physical illness.

Demographic trends and mental disorders

There is a big demographic transition that impacts on SSA and other low income regions much more than the developed world. The present population of children and adolescents is the largest in the history of the world.⁵³ It is not just about absolute numbers and the huge dependency ratio, but this is also the largest cohort of young people with poor social and human capital. This is a result of conflicts, complex emergencies and the HIV and AIDS epidemic.⁵⁴ The numbers of orphans and vulnerable children globally have been estimated to be 143 million, with 43.3 million in SSA, while Asia has the highest total numbers of orphans (87.6 million). The highest proportion of orphans is in SSA.^{54,55} More than eight million children have lost one or both parents to AIDS since the epidemic began. Most of these children have not had access to education, and many are living on the streets or in child-

headed households.^{54,55} In 23 countries studied by the United Nations Population Fund (UNFPA), the number of these 'AIDS orphans' was expected to reach 40 million by 2010.^{54,56}

There are also challenges due to huge rural to urban area migration patterns. Currently one billion people, one-third of the world's population and 70% of urban dwellers in Africa live in urban slums.⁵⁷ It is estimated that by 2030, 1.7 billion people will live in large slums, putting these populations at risk of inner-city violence, drug and alcohol abuse, as well as higher rates of street children.^{57,58} It is often said that family structures are stronger in low-income countries. However, the reality is that families are becoming more nuclear as young couples migrate to the cities and raise their children away from their grandparents, who remain in the villages; couples are often divided as men leave home to seek work elsewhere and may only visit home a few times a year; and there are enormous numbers of child-headed households due to parental mortality from HIV and other reasons.

As overall population health improves, there is an increasing population of older people. This ageing population is complicated by changing lifestyles in population cohorts, the commercialisation of global eating habits, more sedentary lifestyles, less exercise, increasing alcohol consumption and aggressive marketing of tobacco, leading to SSA and other low-income countries facing a double burden of disease, with high prevalence of both communicable and non-communicable disorders.⁵⁷ Mental disorders are likely to increase in importance in future years because of population ageing, changing lifestyles with reduced exercise, more smoking and drinking and increased numbers of older people with dementia.

Gender and mental health

The area of gender and mental health, while important, is an area that for the most part has not been given its due attention. Attention is merited not just because depression is more common in women than men, while substance abuse is more common in men, but also because of the excess male mortality, most marked in Eastern Europe, linked to the economic and social transition in the region.⁵⁹ In almost all countries across the world rates of suicide are considerably higher for men than for women. China is an exception.⁶⁰

The same is true for rates of death from cardiovascular disease, stroke and injuries.⁵⁹ Eastern Europe and the Russian Federation also have very high rates

of alcohol and substance abuse.^{59,61} It is possible to postulate that the socio-economic changes that occurred as a result of Perestroika have had a greater mental health impact on men, or that the coping strategies of men are different from those of women. It is thus important to design targeted mental health promotion and mental disorders prevention programmes for such populations.

Women's health is not researched as much as that of men and this means that very often services are not provided for them. As an example, the occurrence of co-morbidity of depression and stroke was found to be high in men, and interventions were therefore planned for men but not women, but only because information on the incidence of stroke in women has been much more limited.^{62,63} Due to the stigma that surrounds women who abuse alcohol and/or drugs, the prevalence of alcohol and drug abuse among women as well as the impacts of drug and alcohol abuse in women are not widely researched; thus women may find themselves excluded from treatment services. Thus for example in Afghanistan, there is no treatment programme for women who may abuse drugs.⁶⁴

The issue of violence against women, which has a strong interrelationship with depression, anxiety and post-traumatic stress disorder, as well as having negative economic and health outcomes, is for the most part treated solely as a reproductive health issue or left to women's rights non-governmental organisations (NGOs) to address. Governments and donors who have systematically provided funds to address the psychosocial and mental health consequences of violence against women are few and far between.

The consequences and impact of mental ill health

Mental ill health constitutes a heavy burden in terms of suffering, disability and mortality and contributes substantially to costs of health care and social care. It causes loss of economic productivity due to people being unable to work, absenteeism from work and poor performance at work, as well as from accidents and violence at work. Premature death of people with mental illness, for example from suicide or from physical illness, contributes to lost productivity and also the loss of a breadwinner for the dependent family, which can lead to poverty.

Few estimates of these costs have, however, been made outside the developed world.⁶⁵ For instance, one Kenyan study estimated that the total costs per patient for 5678 individuals with mental health problems hospitalised in 1999 were US \$2351. This

included out of pocket costs to family members of US \$51 and productivity losses of US \$453.⁶⁶ At the same time, the average income per head of the population in Kenya was just US \$580 per annum, with more than half the population living on less than US \$1 per day.⁶⁷

In India, the overall costs for outpatients with schizophrenia (US \$274) included not only the cost of lost opportunities to work for the individuals with the illness and their families, but also the loans taken out to meet the costs of treatment and money spent on repairing damage to property.⁶⁸

The impact on family caregivers can also be considerable. A study of 300 family caregivers in rural communities in Ethiopia found that they experienced financial difficulties, constraints on their social life, reduced opportunities to work and strained family relationships.⁶⁹ Similarly, a study of 66 caregivers in Zimbabwe reported that two-thirds experienced financial difficulties, especially as food consumption by their relative increased.⁷⁰

Furthermore, mental ill health leads to reduced access to, and reduced success of, prevention and treatment programmes for physical health problems. For all these reasons, mental ill health poses a burden to families. However, it can also cause an intergenerational burden. For example, untreated childhood disorders can give rise to educational failure, and hence to unemployment and to illness in adult life. And, left untreated, parental disorders can damage intellectual, physical and emotional development of children, leading to childhood disorders and hence to the intergenerational cycle of disadvantage.⁷¹

Many mental health problems are chronic, unless successfully treated, and are accompanied by severe disability. We have already highlighted that, contrary to popular perception, mental disorders are major killers, with the increased risk of physical co-morbidities, as well as suicide, being major causes of avoidable mortality. There is virtually no data available in low- and middle-income countries on the costs of physical co-morbidities. Data from one study of six cities worldwide, including Port Alegre (in Brazil) and St Petersburg, reported that healthcare costs were between 17% and 46% higher for individuals who had co-morbid depression and physical health problems.⁷²

Mental health and the Millennium Development Goals

Although not one of the Millennium Development Goals (MDGs) mentions mental health, there is a

strong link to mental health in almost all of them. The link to poverty (MDG 1) will be discussed in a later paper in this series.¹ Children who have mental disorders are the ones who repeat classes and often drop out of school. Children of mothers with depression have been found to have poor nutritional and educational outcomes (MDG 2). MDG 3, on gender equality, targets the equal access of education to girls. It also addresses gender-based violence, discussed above.

Child health (MDG 4) is intricately linked to the health and wellbeing of the primary care giver, often the mother. If the mother is being abused, or has a mental disorder, routine clinic visits for immunisation will not be made, children with asthma will not be taken promptly to hospital and the children's health and nutritional outcomes will be poor. Mental disorders also impact on the survival of offspring. For example, depression among mothers markedly increases the risk for malnutrition in children, impacting on both mother and child mortality (MDGs 5 and 4 respectively).^{71,73} Depression in mothers also increases the likelihood of children dying from infant diarrhoea.

In looking at maternal and child health, it is crucial to take a holistic approach if good outcomes are to be achieved. Since women go to health units for antenatal care, delivery or postnatal or well-baby clinics, and since depression, anxiety and other common mental disorders are much more prevalent among women, especially around this time, it would seem important to screen for these disorders as an integrated component of providing reproductive health services.

In terms of tackling communicable disease, people with mental illness or epilepsy, especially women, are more vulnerable to abuse, including sexual abuse, putting them at higher risk for contracting and spreading HIV (MDG 6).⁷⁴⁻⁷⁶ We have also highlighted the increased risk of co-morbid poor mental health and TB.^{77,78} Another challenge is the high level of mental illness and learning disability in children affected by malaria, especially in countries of SSA where there is hyper-endemic malaria due to *Plasmodium falciparum*.⁷⁹⁻⁸¹

Better efficiencies can be made if mental disorders are better recognised and managed at the primary care level. This is linked to achieving the MDG targets on combating HIV and AIDS, TB and malaria (MDG 6). The links between mental health and HIV, TB and malaria are well-demonstrated,⁸¹ including evidence on how the early recognition and management of mental disorders can improve treatment adherence, decrease drug resistance and improve overall treatment outcomes for HIV and tuberculosis.^{76,78}

Global partnerships (MDG 8) have a linkage to mental health. They influence resource priorities and allocations; and as development aid falls with the present economic crisis, mental health is likely to be adversely impacted. Global partnerships also have the potential to develop private-public partnerships for the delivery of essential drugs and other interventions to low-income countries – this potential has not been taken advantage of in relation to mental disorders, even for those countries where mental health is prioritised in Poverty Reduction Strategy Papers (PRSPs). Care must be taken not to provide expensive non-generic drugs to developing countries, where sustainability becomes an issue when the funding runs out. The availability of drugs for chronic conditions is one of the health access and equity issues that people with mental disorders face, especially those living in rural areas and the poor.

International actors and partnerships also have a role in respect of mental disorders and psychosocial problems due to complex environmental, socio-economic and military emergencies. As environmental consequences of globalisation, such as the alternating flooding and drought leading to famine in Western Kenya and Eastern Uganda, continue to impact on low-income countries so too will mental health consequences. In planning emergency responses for the environmental and other complex emergencies resulting from changes in the environment, mental health and psychosocial interventions have to be taken into account. One recent example of this has been the focus on dealing with psychological trauma within the international relief effort in respect of the Asian tsunami.

Can mental disorders be prevented?

Some of the burden of mental disorders can be prevented by strengthening individuals and communities, by targeting at-risk populations and groups, and by targeting risky events, so as to avoid them or to mitigate these risks. Individuals can be strengthened by practices designed to promote self-efficacy, emotional/social skills and resilience, motivation and purpose, empathy and pro-social behaviour, and through physical activities such as exercise, nutrition, the avoidance of excess consumption of alcohol and by developing and maintaining strong social networks. For example, children can be encouraged to engage in productive activities, given responsibility and encouraged to be aware of other's needs. Parents

and teachers can be supported in best practice in their parenting and teaching skills for children. In the workplace, stress audits can encourage organisational practices to enhance worker wellbeing. A first step here in low-income countries is to have some legislation recognising the importance of protecting the physical and mental health of workers. Communities can be strengthened by increasing social inclusion and participation, improving community safety and neighbourhood environments, promoting child care and self-help networks and improving mental health within schools and workplaces, e.g. through developing cooperation and anti-bullying strategies.^{82,83}

A key area for action, where the evidence base in high-income countries is increasingly robust, is in the provision of early years interventions for children. Increased access to education, as well as emotional help and support and measures to prevent bullying can have a positive impact on mental health that persists into adulthood.^{84,85} There is also evidence that encouraging lifestyle change, for instance inclusion of regular exercise, can help promote good mental health.⁸⁶ Avoiding excessive consumption of alcohol and not smoking will also help.

In relation to addressing the risk and protective factors associated with mental disorders, there is now good understanding of some social risks and protective factors, as well as a rapidly growing understanding of biological influences. In particular, much more could be done to address the risk factors, many of which can be modified.

A case example is the issue of debt, where research has shown that this is a much stronger risk factor than low income.^{87,88} In any event, higher income of itself won't reduce the rates of mental disorders in a population, as rates of mental disorders are linked to income disparities, which are likely to increase with development. However, for individuals increasing income will be helpful as it helps reduce likelihood of mental illness and helps reduce catastrophic effects of costs of illness and lost productivity. Income equality and a reduction in unmanageable debts, e.g. by investment in fair microcredit services, would help prevent mental disorders.⁸⁷

Other areas for action include providing timely and effective support for those experiencing catastrophic life events, including bereavement; especially following a suicide. Treatment of parental illness is an important action to prevent illness in children. However, mental health promotion and prevention alone, although important, will never be sufficient, and treatment, rehabilitation and prevention of mortality are also required.

Can mental disorders be effectively treated?

The quick answer is yes. Most people with common mental disorders – around 10% of the population – can be effectively treated and achieve full recovery. Even in the case of severe disorders such as psychosis (affecting around 1% of the population), one-third will only have one episode of illness and will make a full recovery, one-third will experience relapse unless they are maintained on medication to prevent relapse and one-third will deteriorate unless they receive active rehabilitation. Children with mental disorders (10% of the population) can also be treated; this is very important so that the impact on educational attainment can be alleviated, while the risk of progression into an adult disorder can also be reduced. There are many systematic reviews on effective treatments,^{89–91} while the WHO has produced good practice guidelines for primary care,⁹² which have been adapted for Kenya, Tanzania, Uganda and Malawi.^{93–95}

Moreover, there is an increasing body of evidence demonstrating that cost-effective treatments for mental health problems are available in even the most resource-constrained parts of the globe. Cost-effective mental healthcare treatments covering psychosis, depression and panic disorder can be identified for all areas of the globe.^{96–98} In a low-income country context, in respect of schizophrenia, a combination of older antipsychotic drugs and psychosocial treatment delivered in a community based setting appears cost-effective in Nigeria, for example, at a cost per averted DALY of \$1,670.⁹⁹ Despite this evidence base, many interventions (newer drugs and newer psychological interventions) are not available in low-income countries and clinical human resource are much more constrained.¹⁰⁰ Nonetheless there is much that can be done in the present circumstances: to make a package of mental health care available at a population level would cost between \$3 and \$4 per capita per annum in SSA and Asia.⁹⁸ In summary, mental disorders can be cost-effectively treated with good multi-axial assessment and management planning, psychosocial support and medications where necessary.

Access to medicines

Depression can be treated effectively with a range of generic medications, including the older tricyclic antidepressants, which are low-cost and effective,

accompanied by psychosocial support. Newer medications, now available in rich countries and in the private sector in low-income countries, are often easier to tolerate, but systematic reviews do not show better clinical outcomes.¹⁰¹ Anxiety (and indeed depression) is often treated with benzodiazepines in low-income countries, but this is bad practice as benzodiazepines are addictive and not curative. Anxiety is best treated by behavioural therapies. Mild and moderate depression and anxiety can also be treated with cognitive behaviour therapy, but this is only effective where there is intensive supervision. At present, low-income countries do not have sufficient human resources to provide such regular supervision, hence investment in development of the numbers and capacity of staff to manage mental illness is a key priority for health systems in low-income countries.

Acute episodes of psychosis are treated by phenothiazine medication. Again, the older medications are cheap and widely available. Newer medications that have a different profile and side effects are often preferred by doctors and clients but are much, much more expensive, while systematic reviews do not show significantly enhanced outcomes.^{90,91} Therefore once again more value would be obtained by regular systematic continuing professional development (CPD) for primary and secondary care practitioners, so that professionals are efficiently able to deliver existing medications and psychological therapies. Regular systematic support and supervision for primary care at the district level will be more efficient than simply relying on the provision of newer medicines. Relapse of bipolar disorder is avoided by lithium but this needs regular monitoring of drug blood levels and hence is not available in primary care. Again, generic health system strengthening to provide primary care with better access to laboratory facilities, for example, will assist this.

A small proportion of clients with long-term problems need intensive social and economic rehabilitation. In high-income countries this is undertaken at specialist level, but in low-income countries there are too few medical and rehabilitation specialists to attend to the needs of those with a severe mental illness. Hence, rehabilitation will need to be undertaken at the community level, with inputs from communities themselves and from primary care professionals. On average a primary care centre of 10 000 people may have 100 people with psychosis, 300 with severe depression and 300 with epilepsy, of whom at least half would need active rehabilitation: far too many to refer to the district level.

There is also a major access to medicines issue in the faulty distribution of medicines to primary care. This is patchy across most low- and middle-income countries, with blockages at various stages of the

supply chain. By and large, diazepam is far too available at primary care level and is used as a multipurpose medication for mental disorders when in fact it is ineffective, addictive and will make matters worse. Its use should be restricted to pre-eclampsia and status epilepticus. Antidepressants are often not available at primary care level, but this is where they are most needed. Antipsychotic drugs are generally available, although often there is a shortage of long-acting medications, which are very useful for management of clients with chronic illnesses.

To reiterate, effective treatment consists of good physical, psychological and social assessment and management; treatment should never be with medication alone. Access to medicines for mental health entails ensuring sustained systematic distribution of the old generics to all health facilities, distribution of good practice guidelines, regular systematic CPD so that staff are competent to assess, diagnose and manage the physical, psychological and social aspects of illness, regular support and supervision from the district level and inclusion of mental health in health information systems.

The value of mental capital for economic and social development

Mental capital is also an important concept for countries wishing to maximise development for their populations.⁴ Human development is a complex, multi-faceted concept. It is generally recognised that the traditional measures which make up the composite of human development index (life expectancy, literacy and gross domestic product), while important in themselves, are nonetheless reductionist and do not capture many important aspects of human development, including those relating to mental health and wellbeing.¹⁰² This narrow focus exacerbates the lack of appreciation by policy makers of the link between mental health and development. Tragically, the results of that lack of appreciation are even more stark in low- and middle-income countries where there is a more compelling need to harness their human resources for accelerated national development.¹⁰³

The contribution of better health to development goes beyond a reduction of clinical symptoms and disability, greater workplace productivity and the lost productivity of carers. The economic benefits of cohesive social functioning have led to the recent interest in development and strengthening of social

capital. Cohesive and productive groups of individuals are considered to be more than just the sum of their individual human capital. There is increasing research demonstrating that social capital adds a critical element to sustainable development. Social capital influences country productivity and trade. Communities that possess more social capital tend to have higher productivity, facilitated by improved coordination and cooperation and a reduction in the cost of doing business. There is an extensive literature spanning many decades on the relationship between socio-economic variables, social networks, life events and mental health. Individual and population interventions which improve an individual's mental health will enhance the individual attributes necessary for constructive social interaction and for the assumption of a productive social role. All of this will contribute to building social capital in a country. For example, research in Rwanda and Cambodia has demonstrated that an increase in individual attributes such as interpersonal communication, trust and resilience contributed to the rebuilding of social capital in the post-conflict progress of both countries.¹⁰⁴ The importance of mental health to social capital, especially the interrelationship of trust, has been widely discussed.^{105,106}

Conclusion

This article has brought together some of the core concepts around mental health and mental illness, prevalence rates, demographic trends and links with gender issues; the causes and consequences of mental illness including disability, mortality and the impact on the achievement of the MDGs; the potential for prevention and treatment, including the important issue of access to medicines; and finally the value of mental capital for social and economic development.

The WHO in 2001 prioritised mental health in its landmark World Health Report on *Mental Health: new understanding and new hope*,¹⁰⁷ and subsequently the Wonca/WHO report *Integrating Mental Health into Primary Care: a global perspective*⁹² clearly set the central task for increasing population access to mental health care. The interested reader is also referred to the recent *Lancet* 2007 series calling for action on mental health.^{77,100,108} We also hope the series of articles presented in this issue of *Mental Health and Family Medicine* will assist the international health community to address mental health strategically and effectively.

REFERENCES

- Jenkins R, Baingana F, Ahmad R, McDaid D and Atun R. Social, economic, human rights and political challenges to global mental health. *Mental Health in Family Medicine* 2011;8:87–96.
- Jenkins R, Baingana F, Ahmad R, McDaid D and Atun R. International and national policy challenges in mental health. *Mental Health in Family Medicine* 2011;8:101–14.
- Jenkins R, Baingana F, Ahmad R, McDaid D and Atun R. Health system challenges and solutions to improving mental health outcomes. *Mental Health in Family Medicine* 2011;8:119–27.
- Beddington J, Cooper CL, Field J *et al.* The mental wealth of nations. *Nature* 2008;455:1057–60.
- Institute of Medicine. *Neurological, Psychiatric, and Developmental Disorders: meeting the challenge in the developing world.* Washington DC: National Academy Press, 2001.
- World Bank. *World Development Report 1993: investing in health.* Washington DC: World Bank, 1993.
- WHO. *The Global Burden of Disease: 2004 update.* Geneva: World Health Organization, 2008.
- Mathers CD and Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine* 2006;3:e442.
- Mathers C and Loncar D. *Updated Projections of Global Mortality and Burden of Disease, 2002–2030: data sources, methods, and results.* Evidence and Information for Policy Working Paper, 2005.
- Murray C and Lopez A. *The Global Burden of Disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020.* Boston, MA: Harvard University Press, 1996.
- Kessler R and Ustun T (eds). *The WHO World Mental Health Surveys: global perspectives on the epidemiology of mental disorders.* New York, NY: Cambridge University Press, 2008.
- Kalaria RN, Maestre GE, Arizaga R *et al.* Alzheimer's disease and vascular dementia in developing countries: prevalence, management, and risk factors. *The Lancet Neurology* 2008;7:812–26.
- Ferri CP, Prince M, Brayne C *et al.* Global prevalence of dementia: a Delphi consensus study. *The Lancet* 2005;366:2112–17.
- Bell J. An update on the neuropathology of HIV in the HAART era. *Histopathology* 2004;45:549–59.
- Harris EC and Barraclough B. Excess mortality of mental disorder. *British Journal of Psychiatry* 1998; 173:11–53.
- McDaid D. *Bridging the Gap Between Physical and Mental Health.* Brussels: Mental and Physical Health Platform, 2009.
- Peet M. Diet, diabetes and schizophrenia: review and hypothesis. *British Journal of Psychiatry* 2004;47: S102–5.
- Gupta A and Craig T. Diet, smoking and cardiovascular risk in schizophrenia in high and low care

- supported housing. *Epidemiologie e Psichiatria Sociale* 2009;18:200–7.
- 19 Glassman A. Depression and cardiovascular disease. *Pharmacopsychiatry* 2008;41:221–5.
 - 20 Katon W. The comorbidity of diabetes mellitus and depression. *American Journal of Medicine* 2008;121: S8–15.
 - 21 Gadalla T. Association of obesity with mood and anxiety disorders in the adult general population. *Chronic Diseases in Canada* 2009;30:29–36.
 - 22 Ormel J, Von Korff M, Burger H *et al*. Mental disorders among persons with heart disease: results from World Mental Health surveys. *General Hospital Psychiatry* 2007;29:325–34.
 - 23 Sherwood A, Blumenthal JA, Trivedi R *et al*. Relationship of depression to death or hospitalization in patients with heart failure. *Archives of Internal Medicine* 2007;167:367–73.
 - 24 Jenkins R and Mussa M. *Mortality in Zanzibar psychiatric in-patient unit*. Forthcoming.
 - 25 Frasure-Smith N and Lesperance F. Depression and cardiac risk: present status and future directions. *Heart* 2010;96:173–6.
 - 26 Baingana F, Thomas R and Comblain C. *Mental Health and HIV/AIDS*. Washington, DC: Health Nutrition Population, The World Bank, 2005.
 - 27 Pence B. The impact of mental health and traumatic life experiences on antiretroviral treatment outcomes for people living with HIV/AIDS. *Journal of Antimicrobial Chemotherapy* 2009;63:636–40.
 - 28 Husain MO, Dearman SP, Chaudhry IB, Rizvi N and Waheed W. The relationship between anxiety, depression and illness perception in tuberculosis patients in Pakistan. *Clinical Practice and Epidemiology in Mental Health* 2008;4:4.
 - 29 Kinyanda E, Hjelmeland H and Musisi S. Psychological factors in deliberate self-harm as seen in an urban African population in Uganda: a case-control study. *Suicide and Life-threatening Behavior* 2005; 35:468–77.
 - 30 Musisi S and Kinyanda E. Emotional and behavioural disorders in HIV seropositive adolescents in urban Uganda. *East African Medical Journal* 2009;86:16–24.
 - 31 Moshiro C, Mswia R, Alberti K *et al*. The importance of injury as a cause of death in sub-Saharan Africa: results of a community-based study in Tanzania. *Public Health* 2001;115:96–102.
 - 32 National Institute of Mental Health. *The Numbers Count: mental disorders in America*. 2008. www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml#Suicide (accessed 12 December 2009).
 - 33 Jenkins R, Bhugra D, Meltzer H *et al*. Psychiatric and social aspects of suicidal behaviour in prisons. *Psychological Medicine* 2005;35:257–69.
 - 34 Physicians for Human Rights. *Women's Health and Human Rights in Afghanistan: a population based assessment*. Washington, DC: Physicians for Human Rights, 2001.
 - 35 Cardozo BL, Bilukha OO, Gotway CA *et al*. Mental health of women in postwar Afghanistan. *Journal of Women's Health* 2005;14:285–93.
 - 36 Tidemalm D, Långström, Lichtenstein P and Runeson B. Risk of suicide after suicide attempt according to co-existing psychiatric disorder: Swedish cohort study with long term follow up. *BMJ* 2008; DOI: 10.1136/bmj.a2205.
 - 37 Mann JJ, Apter A, Beautrais A *et al*. Suicide prevention strategies: a systematic review. *Journal of the American Medical Association* 2005;294:2064–74.
 - 38 Hawton K, Ratnayake L, Simkin S, Harriss L and Scott V. Evaluation of acceptability and use of lockable storage devices for pesticides in Sri Lanka that might assist in prevention of self-poisoning. *BMC* 2009;69:DOI: 10.1186/1471-2458-9-69.
 - 39 Hawton K and van Heeringen K. Suicide. *The Lancet* 2009;373:1372–81.
 - 40 Gunnell D, Fernando R, Hewagama M *et al*. The impact of pesticide regulations on suicide in Sri Lanka. *International Journal of Epidemiology* 2007; 36:1235–42.
 - 41 Vijayakumar L, Pirkis J and Whiteford H. Suicide in developing countries (3): prevention efforts. *Crisis* 2005;26:120–4.
 - 42 United Nations. *Prevention of Suicide: guidelines for the formation and implementation of national strategies*. New York, NY: United Nations, 1996.
 - 43 Jenkins R. Addressing suicide as a public-health problem. *The Lancet* 2002;359:813–14.
 - 44 Jenkins R, Friedli L and McCulloch A. *Developing a National Mental Health Policy*. East Sussex, UK: Psychology Press, 2002.
 - 45 Ormel J, Petukhova M, Chatterji S *et al*. Disability and treatment of specific mental and physical disorder across the world. *British Journal of Psychiatry* 2008;192:368–75.
 - 46 Tafari S, Aboud F and Larson C. Determinants of mental illness in a rural Ethiopian adult population. *Social Science and Medicine* 1991;32:197–201.
 - 47 Abas M and Broadhead J. Depression and anxiety among women in an urban setting in Zimbabwe. *Psychological Medicine* 1997;27:59–71.
 - 48 Alem A *et al*. The prevalence and socio-demographic correlates of mental distress in Butajira, Ethiopia. *Acta Psychiatrica Scandinavica* 1999;397: 48–55.
 - 49 Gureje O, Lasebikan VO, Kola L *et al*. Lifetime and 12-month prevalence of mental disorders in the Nigerian Survey of Mental Health and Well-Being. *British Journal of Psychiatry* 2006;188:465–71.
 - 50 Amoran O, Lawoyin T and Lasebikan V. Prevalence of depression among adults in Oyo State, Nigeria: a comparative study of rural and urban communities. *Australian Journal of Rural Health* 2007;15:211–15.
 - 51 Kinyanda E. Mental health. In: *The Support to the Health Sector Strategic Plan Project: results of the baseline survey report to provide basic data for the development of the National Communication Strategy, for the promotion of the National Minimum Health Care Package (NMHCP)*. I.D.a.S. Limited, Editor. Kampala: Ministry of Health, 2004.

- 52 Baingana FK, Alem A and Jenkins R. Mental health and the abuse of alcohol and controlled substances in disease and mortality in Sub-Saharan Africa. In: Jamison D *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006, pp. 329–50.
- 53 World Bank. *Urgent Need to Invest More in Developing World's Record Youth Population, says World Development Report*. 2006. web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21049364~pagePK:64257043~piPK:437376~theSitePK:4607,00.html (accessed 12 December 2009).
- 54 UNAIDS, UNICEF and USAID. *Children on the Brink 2004*. New York, NY: UNICEF, 2004.
- 55 UNICEF. *The State of the World's Children 2006: excluded and invisible*. New York: UNICEF, 2006.
- 56 UNAIDS. *UNAIDS Global Report on the AIDS Epidemic 2010*. 2010.
- 57 UNFPA. *Fast Facts*. 2005. web.unfpa.org/pds/facts.htm (accessed 12 December 2009).
- 58 UN Economic and Social Affairs. *World Urbanization Prospects: the 1999 revision*. 1999.
- 59 Paci P. *Gender in Transition*. Washington, DC: The World Bank, 2002.
- 60 Qin P and Mortensen P. Specific characteristics of suicide in China. *Acta Psychiatrica Scandinavica* 2001;103:117–21.
- 61 WHO. *Global Status Report on Alcohol 2004*. Geneva: World Health Organization, 2004.
- 62 Petitti DB, Sidney S, Quesenberry CP *et al*. Incidence of stroke and myocardial infarction in women of reproductive age. *Stroke* 1997;28:280–3.
- 63 Sen G, George A and Ostlin P. Engendering health equity: a review of research and policy. In: Sen G, George A and Ostlin P (eds) *Engendering International Health: the challenge of equity*. Cambridge, MA: The MIT Press, 2002, pp. 1–33.
- 64 Baingana F. Alcohol and substance abuse. In: Chanda PS, Herrman H, Fisher JE *et al* (eds) *Contemporary Topics in Women's Mental Health: global perspectives in a changing society*. Chichester, UK: Wiley-Blackwell, 2009, pp. 329–50.
- 65 Knapp M, Funk M, Curran C *et al*. Mental health in low- and middle-income countries: economic barriers to better practice and policy. *Health Policy and Planning* 2006;21:157–70.
- 66 Kirigia J and Sambo L. Cost of mental and behavioural disorders in Kenya. *Annals of General Hospital Psychiatry* 2003;2:7.
- 67 McDaid D, Knapp M and Raja S. Barriers in the mind: promoting an economic case for mental health in low- and middle-income countries. *World Psychiatry* 2008;7:79–86.
- 68 Grover S, Avasthi A, Chakrabarti S *et al*. Cost of care of schizophrenia: a study of Indian out-patient attenders. *Acta Psychiatrica Scandinavica* 2005;112: 54–63.
- 69 Shibre T, Kebede D, Alem A *et al*. Schizophrenia: illness impact on family members in a traditional society – rural Ethiopia. *Social Psychiatry and Psychiatric Epidemiology* 2003;38:27–34.
- 70 Nyati Z and Sebit M. Burden of mental illness on family members, care-givers and the community. *East African Medical Journal* 2002;79:206–9.
- 71 Rutter M and Quinton D. Parental psychiatric disorder: effects on children. *Psychological Medicine* 1984;14:853–80.
- 72 Chisholm D, Diehr P, Knapp M *et al*. Depression status, medical comorbidity and resource costs. Evidence from an international study of major depression in primary care (LIDO). *British Journal of Psychiatry* 2003;183:121–31.
- 73 Patel V, Rahman A, Jacob KS *et al*. Effect of maternal mental health on infant growth in low income countries: new evidence from South Asia. *BMJ* 2004;328:820–3.
- 74 Des Jarlais DC, Arasteh K, Perlis T *et al*. Convergence of HIV seroprevalence among injecting and non-injecting drug users in New York City. *AIDS* 2007;21:231–5.
- 75 Altice FL, Kamarulzaman A, Soriano VV *et al*. Treatment of medical, psychiatric, and substance-use comorbidities in people infected with HIV who use drugs. *The Lancet* 2010;376:367–87.
- 76 Ciesla J and Roberts J. Meta analysis of the relationship between HIV infection and risk for depressive disorders. *American Journal of Psychiatry* 2001;158: 725–30.
- 77 Prince M, Patel V, Saxena S *et al*. No health without mental health. *The Lancet* 2007;370:859–77.
- 78 Janmeja AJ, Das SK, Bhargava R *et al*. Psychotherapy improves compliance with tuberculosis treatment. *Respiration* 2005;72:375–80.
- 79 Snow RC, Guerra CA, Noor AM *et al*. The global distribution of clinical episodes of *Plasmodium falciparum* malaria. *Nature* 2005;434:214–17.
- 80 Amexo M, Tolhurst R, Barnish G *et al*. Malaria misdiagnosis: effects on the poor and vulnerable. *The Lancet* 2004;364:1896–8.
- 81 Weiss M. The inter-relationship of tropical disease and mental disorder: conceptual framework and literature review. Part 1: Malaria. *Culture, Medicine and Psychiatry* 1985;9:121–200.
- 82 Barry M and Jenkins R (eds). *Implementing Mental Health Promotion*. London: Elsevier, 2006.
- 83 Foresight. *Foresight Mental Capital and Wellbeing Project: final project report*. London: The Government Office for Science, 2008.
- 84 Olweus D, Limber S and Mihalic S. *Book Nine: Bullying Prevention Programme*. Blueprints for Violence Prevention series, IoBSUoC (ed.). Boulder, Co: Centre for the Study and Prevention of Violence, 1998.
- 85 Moore M. Guiding framework for policy approaches to school bullying and violence. In: *OECD International Policy Conference: taking fear out of schools*. Stavanger, Norway, 2004.
- 86 Byrne A and Byrne D. The effect of exercise on depression, anxiety and other mood states: a review. *Journal of Psychosomatic Research* 1993;37: 565–74.

- 87 Jenkins R, Fitch C, Hurlston M *et al*. Recession, debt and mental health: challenges and solutions. *Mental Health in Family Medicine* 2009;6:85–90.
- 88 Jenkins R, Bhugra D, Bebbington P *et al*. Debt, income and mental disorder in the general population. *Psychological Medicine* 2008;38:1485–93.
- 89 Lieberman J, Stroup TS, McEvoy JP *et al*. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *New England Journal of Medicine* 2005;353:1209–23.
- 90 Bhattacharjee J and El-Sayeh H. Aripiprazole versus typical antipsychotic drugs for schizophrenia. *Cochrane Database of Systematic Reviews* 2008. 2010.
- 91 El-Sayeh H and Morganti C. Aripiprazole for schizophrenia. *Cochrane Database of Systematic Reviews* 2006. 2009.
- 92 WHO and Wonca. *Integrating Mental Health into Primary Care: a global perspective*. Geneva: World Health Organization, 2008.
- 93 Jenkins R, Kiima D, Njenga F *et al*. Integration of mental health into primary care in Kenya. *World Psychiatry* 2010;9:118–20.
- 94 Mbatia J and Jenkins R. Development of a mental health policy and system in Tanzania: an integrated approach to achieve equity. *Psychiatric Services* 2010;61:1028–31.
- 95 Baingana F. Mental health services in Uganda: analysis and documentation of the implementation of integration of mental health into primary health care. In: *Social Policy*. London: London School of Economics, 2010, p. 46.
- 96 Patel V. Mental health in low- and middle-income countries. *British Medical Bulletin* 2007;81–82:81–96.
- 97 Hyman S *et al*. Mental health disorders. In: Jamison D, Breman JG, Measham AR *et al* (eds) *Disease Control Priorities in Developing Countries* (2e). New York, NY: Oxford University Press, 2006.
- 98 Patel V, Araya R, Chatterjee S *et al*. Treatment and prevention of mental disorders in low-income and middle-income countries. *The Lancet* 2007;370:991–1005.
- 99 Chisholm D, Gureje O, Saldivia S *et al*. Schizophrenia treatment in the developing world: an interregional and multinational cost-effectiveness analysis. *Bulletin of the World Health Organization* 2008;86:542–51.
- 100 Saxena S, Thornicroft G, Knapp M *et al*. Resources for mental health: scarcity, inequity, and inefficiency. *The Lancet* 2007;370:878–89.
- 101 National Institute for Health and Clinical Excellence (NICE). *The NICE Clinical Guidelines on Depression*. London: NICE, 2010.
- 102 Ranis G, Stewart F and Samman E. *Human Development: beyond the Human Development Index*. Yale University Economic Growth Center, Discussion Paper No. 916, 2005.
- 103 Gureje O and Alem A. Mental health policy development in Africa. *Bulletin of the World Health Organization* 2000;78:475–82.
- 104 Colletta N and Cullen M. *Violent Conflict and the Transformation of Social Capital: lessons from Cambodia, Rwanda, Guatemala and Somalia*. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 2000.
- 105 Cullen M and Whiteford H. *The Interrelations of Social Capital with Health and Mental Health: National Health Strategy Discussion Paper*. Canberra: Commonwealth of Australia, 2001.
- 106 McKenzie K and Harpham T. *Social Capital and Mental Health*. London: Jessica Kingsley Publishers, 2006.
- 107 WHO. *World Health Report 2001. Mental Health: new understanding, new hope*. Geneva: World Health Organization, 2001.
- 108 Chisholm D *et al*. Scale up services for mental disorders: a call for action. *The Lancet*, 2007; 370:1241–52.

CONFLICTS OF INTEREST

None.

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