



Proper care of the mentally ill often is viewed as an expendable luxury in the developing world. Recent research suggests it doesn't have to be that way

The Unseen: Mental Illness's Global Toll

LONDON—When the bloody reign of the Khmer Rouge came to an end in 1979, there were no mental health workers left in Cambodia; they had died or disappeared. For more than a decade, says Phnom Penh psychiatrist Pauv Bunthooun, only traditional healers were available to give treatment, often administering poison or beating the patient with burning incense to drive out vexing spirits.

Conditions started to improve in 1994, Bunthooun told a gathering of researchers and aid workers here.* That year, the Ministry of Health, aided by a team from the University of Oslo, in Norway, began training a new generation of psychiatrists. Bunthooun was one of the first through the program, which has produced all 26 of Cambodia's psychiatrists. Bunthooun's hospital in Phnom Penh now sees up to 200 psychiatric outpatients a day, and in July 2005 it opened a 10-bed

* International Mental Health, 31 August–2 September 2005, Institute of Psychiatry, Kings College London.

inpatient ward—the first and only one in a country of 12 million people.

Such stories of unmet need are a common refrain among mental health workers in the developing world. The imbalance is staggering. The majority of the world's 450 million people who suffer from neuropsychiatric disorders live in developing

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—Veena Das, Johns Hopkins University

countries, but the World Health Organization (WHO) estimates that fewer than 10% have access to treatment. In regions torn by war, poverty, and infectious disease, mental health care is often viewed as an unaffordable luxury. Nearly a third of the world's nations, including many of the

poorest, have no national budget for mental health, according to WHO. Even where budgets exist in developing countries, they average only about 1% of meager health resources. The United Nations Millennium Development Goals make no mention of mental health, nor do the Bill and Melinda Gates Foundation's Grand Challenges in Global Health.

“The mentally ill are particularly disadvantaged among the poor,” says Benedetto Saraceno, director of WHO's mental health department. Untreated mental illness reinforces poverty, researchers say. Yet despite the common assumption that treatments require expensive drugs and complex therapy, recent trials from developing countries on three continents have demonstrated that simple, cheap interventions for common disorders such as depression can be effective. Other recent work suggests that incorporating simple mental health interventions into anti-HIV and other public health campaigns may make them more successful.

Mental health must be addressed like other basic needs, says Vikram Patel, a psychiatric epidemiologist at the London School of Hygiene and Tropical Medicine and a vocal advocate for this cause. “It is unethical to deny effective, feasible, and affordable treatment to millions of people suffering from treatable disorders,” he argues. The challenge, Patel and others say, is to persuade policymakers it's a problem worth addressing.

Standard care. Lockup asylums like this one in Liberia are common throughout the developing world.

How big a burden?

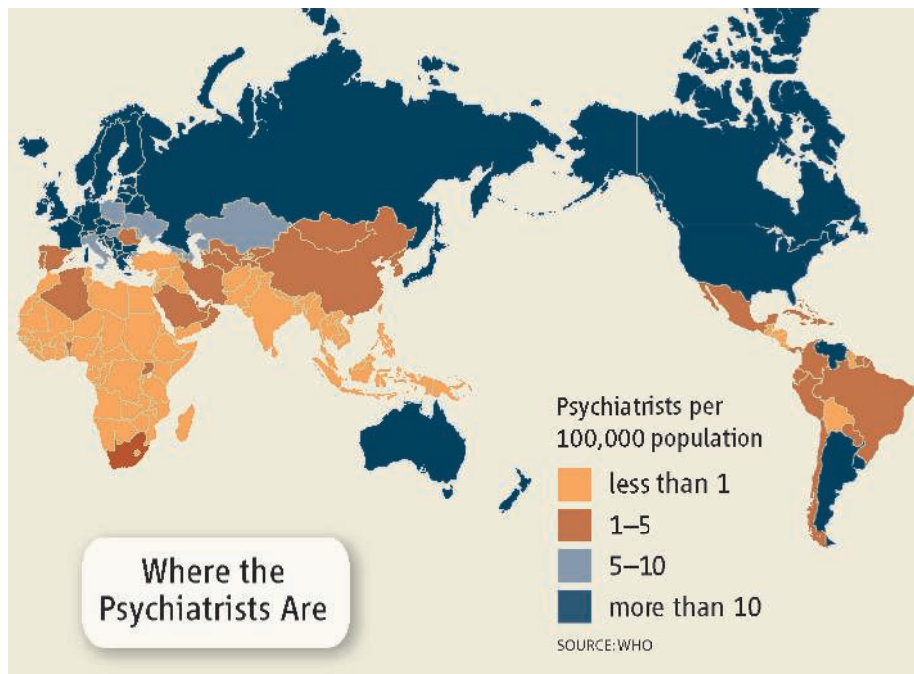
A series of studies begun in the mid-1990s paints a startling picture of the global impact of mental illness. The work, led by WHO, the World Bank, and the Harvard School of Public Health, showed that although mental disorders cause fewer deaths than infectious diseases, they cause as much or more disability because they strike early and can last a long time.

Indeed, mental and behavioral disorders rank among the most burdensome disorders across the world. According to WHO's *World Health Report 2001*, for example, depression ranked fourth among all causes of disability as measured by an index called the DALY. (One disability adjusted life year is a year of healthy life lost to sickness or premature death.) The toll on the young is particularly heavy. For people aged 15 to 44, depression took the second biggest toll of all illnesses, behind only HIV/AIDS. For this age group, alcohol abuse, self-inflicted injuries, schizophrenia, and bipolar disorder also ranked among the top 10 causes of DALYs. In 2002, neuropsychiatric conditions accounted for 24% of DALYs for 15-to-44-year-olds, and 13% overall.

In some areas, particularly sub-Saharan Africa, infectious diseases and malnutrition take such a heavy toll that the share of disability from mental illness falls below the global average. Yet it is in the poorest countries that the burden of mental illness is rising most quickly, according to WHO projections. And this is where resources are thinnest. Just how thin is revealed in an inventory of mental health services described at the London meeting by Shekhar Saxena, WHO's director of mental health evidence and research (www.who.int/mental_health/evidence/atlas). In sub-Saharan Africa, many countries have one psychiatrist—if that—for every million people, compared to 137 per million in the United States.

Penalizing families

Most families in developing countries have no choice but to care for a mentally ill relative at home. And it "really finishes off a household ... when one member has a severe psychiatric problem," says Veena Das, an anthropologist at Johns Hopkins University in Baltimore, Maryland, who has studied mental illness in poor neighborhoods of Delhi in India. Although decent care is available at nominal cost at government hospitals in Delhi, Das says, the hospitals are terribly overburdened. "The lines are so long that someone might go in the morning and have to leave in the evening" without seeing a doctor, she says. People with a chronic disorder such as depres-



sion can't get the regular treatment they need.

Many families turn instead to private practitioners, often wasting their money. A 2004 World Bank study concluded that incompetent practitioners in Delhi tend to congregate in poor neighborhoods. Practitioners often give out free samples from pharmaceutical company representatives rather than prescribing the most effective medicine, Das says: "You go into these really poor households, and you find that drugs have been adminis-

tered in haphazard ways."

The financial burden on families is huge, says Martin Knapp, a health economist at the London School of Economics. The lost income from a relative who's too sick to work is the biggest blow, but often someone works less to become a caregiver. That can have disastrous effects. "You hear about people being chained to trees so that the families can get on with subsistence," Knapp says.

But public funds are scant in the poorest countries, and siphoning money from HIV, malaria, or tuberculosis programs to put toward mental health services probably doesn't make economic sense, says Daniel Chisholm, a health economist at WHO.

Chisholm says investments in mental health services are most likely to pay off for countries a little further up the development scale. Treating common mental disorders such as depression "has similar attractiveness in terms of bang for your buck relative to ... diabetes, hypertension, and cardiovascular disease," Chisholm says. Yet diabetes is commonly treated in low- to middle-income countries and depression commonly isn't, he says: "The difference comes down to stigma ... [and] societal attitudes about what the priority should be."

Even in low-income countries, recent studies suggest that effective treatments may be more affordable than has been widely assumed. In 2003, three independent teams reported that low-cost interventions against depression are feasible and effective. In one study, Paul Bolton, an epidemiologist then at Johns Hopkins Bloomberg School of Public Health, and colleagues enrolled more than 200 people with depression from 30 rural villages in Uganda. Half



Going nowhere. This long-term patient with schizophrenia is chained to a radiator in a Beijing hospital.

CREDITS (TOP TO BOTTOM): K. BUCKHEIT/SCIENCE; KATHARINA HESSE/GETTY IMAGES

Mapping Mental Illness: An Uncertain Topography

Mental disorders were once considered diseases of the affluent. That assumption was based on scant evidence, researchers now say. There are even reasons to suspect that the opposite might be correct, because known risk factors for poor mental health—poverty, HIV, and violence—afflict many parts of the developing world. But the true picture has been hard to nail down. Although clear geographic patterns exist for certain disorders, the figures for others are all over the map. That may reflect real geographic differences in the rates of these disorders, or it could say more about how people from different cultures think about mental health—and how they discuss it with clipboard-toting strangers.

Schizophrenia, a psychotic disorder thought to have a strong genetic component, appears to affect roughly 1% of people worldwide. People with schizophrenia seem to fare better, however, in developing countries (see p. 464). Not surprisingly, the highest rates of posttraumatic stress disorder and related problems are found in tumultuous regions of the developing world. A national survey of strife-torn Afghanistan, reported in the *Journal of the American Medical Association (JAMA)* in 2004, found symptoms of depression in 68% of the 407 people interviewed and symptoms of anxiety in 72%.

Dementia is another story. The prevalence of this disorder, caused mostly by Alzheimer's disease, seems similar in Latin America and in the developed West—about 2% of people aged 65 or older—but rates in India are only half as high, says Martin Prince, a psychiatric epidemiologist at the Institute

of Psychiatry in London and director of Project 10/66, an effort to assess dementia and study interventions in developing countries. Prince suspects that dementia is underreported in India, perhaps because family members are reluctant to appear critical of their elders or because there are fewer demands on older people, which helps mask signs of cognitive decline. Risk of dementia rises with age, so developing countries are likely to be hit hard as their demographics shift. Today, roughly 15 million people with dementia live in developing countries; by 2040, that will rise to 57.5 million and 71% of all dementia cases worldwide, Prince and colleagues predict in a paper published 17 December 2005 in *The Lancet*.

The first batch of findings from the World Mental Health Survey, an extensive project sponsored by the World Health Organization, reveals wide variation in the prevalence of mental disorders. (Schizophrenia and dementia were not included.) Among the 14 countries analyzed so far, the prevalence of mental disorders within the last 12 months ranged from 4.3% in Shanghai, China, to 26.4% in the United States, a team led by epidemiologist Ronald Kessler of Harvard Medical School in Boston reported in June 2004 in *JAMA*. That mirrors a pattern for depression that has long intrigued researchers: It is reportedly scarce in East Asian countries, even though they have some of the highest suicide rates in the world (see p. 462). There was no systematic difference between developed and developing countries, however. Researchers found a relatively low 9% prevalence of all disorders in Japan and Germany, but 20% and 18% prevalence in Ukraine and Columbia. Kessler says the team will publish data from another 14 countries this year.

Some of the country-to-country variation can be attributed to the

participated in weekly group therapy sessions led by a local village health worker who had received 2 weeks of intensive training. After 16 weeks, the severity of symptoms had dropped sharply in the treated group, compared to far more modest spontaneous recovery in the untreated group, the team reported in the *Journal of the American Medical Association (JAMA)*. Bolton's study was the first to show that a Western

approach could be applied in a totally different setting by local people with relatively little training, says Patel.

Subsequently, researchers in Chile reported a successful trial using antidepressants and group therapy sessions led by local nurses and social workers, and a team in Goa, India, led by Patel reported promising results using antidepressants alone. Both studies appeared in *The Lancet* in 2003.

Mind and body

Investments in mental health could pay broad public health dividends. Saraceno points out that mental disorders tend to cluster with other ailments: Depression is a risk factor for heart disease, cancer, and alcohol abuse. At the same time, depression is more common in people with physical ailments. WHO estimates that as many as 45% of people with HIV or tuberculosis develop depression. A 2001 study published in *JAMA* found that depression hastened the progression of disease and more than doubled the mortality rate in HIV-positive women.

The HIV-depression link has worrying implications, says Melvyn Freeman, a clinical psychologist at the Human Sciences Research Council in Pretoria, South Africa. "Someone with depression is not going to take the same precautions as someone who's well and cares about their life," says Freeman. Moreover, he adds, studies from developed countries show that people with depression and other mental disorders are less likely to adhere to complex anti-HIV therapy—which involves an extended course of multiple drugs, some with nasty side effects. Noncompliance is a serious problem because it squanders scant resources and because partial treatment could enable drug-resistant HIV strains to proliferate. Freeman and colleagues have developed a plan for training health care workers to incor-

Early disadvantage. Maternal depression appears to hinder child development in rural Pakistan.



CREDITS: ATIF RAHMAN

difficulty of adapting diagnostic interviews to different cultures, Kessler says. Another difficulty is getting people to talk about their inner turmoil. In some places, “people think if they give a wrong answer to one of our questions the government is going to come and shoot them,” Kessler says. Survey teams work through local religious and community leaders to allay such concerns. Even so, Kessler suspects that teams may be getting underestimates outside of Europe and North America: “We’re working ... to improve the way we ask questions about emotional problems in these countries, but we’re not far enough along to know what we will find.”

At the same time, other researchers suspect that surveys overestimate the prevalence of mental illness in wealthy countries. “It’s an absurdity to say 50% of Americans will have a mental disorder in the course of their lifetime,” says Arthur Kleinman, a medical anthropologist at Harvard Medical School, referring to an estimate Kessler and colleagues published in June 2005 in the *Archives of General Psychiatry*. To Kleinman, the high prevalence figures suggest that the surveys are too sensitive, picking up common unhappiness as well as clinical cases of depression in some populations. “We now have a strange situation in epidemiology,” he says, where mental illness is overestimated in some places and underestimated in others.

—G.M.



porate basic mental health interventions into anti-HIV programs.

In south Asia, a similar strategy might improve low birth weight and stunted childhood development. Several recent studies have found a high prevalence of maternal depression—up to 30% of new mothers—in India and Pakistan. In 2004, Atif Rahman, a child psychiatrist at the University of Manchester, U.K., and colleagues reported in the *Archives of General Psychiatry* that children born to depressed mothers in Rawalpindi, Pakistan, have lower birth weights and slower growth in the first year of life. Such children also are more likely to have diarrheal disease and less likely to receive a complete set of vaccinations. Rahman suspects that depressed mothers may breastfeed less, or even produce less breast milk—a hypothesis his team plans to test.

At the same time, Rahman’s group will evaluate a modest mental health program by enrolling 900 expecting mothers in a randomized trial. Half will receive the usual visits from a village health worker, the other half will receive a combination of counseling and nutrition advice from a health worker who has attended a 2-day workshop put on by Rahman’s team. The researchers will check how the babies are faring 6 and 12 months after birth. They have approached the issue of depression obliquely because “treating women for depression, no matter how you sell it, isn’t sellable” in this rural area of Pakistan, Rahman says. His team has billed the project as a child-development effort.

Rahman’s work shows how mental health is relevant to development goals, says the organizer of the London conference, Martin Prince, a psychiatric epidemiologist at Kings College London. He and others say the best solution is to shift the emphasis away from centralized hospitals to care by well-trained community workers.

People with depression and other mental disorders are less likely to adhere to complex anti-HIV therapy.

—Melvyn Freeman,
Human Sciences Research Council

Uphill battle

But many officials who control the purse strings are not convinced. The World Bank’s position is that there’s not enough evidence to recommend investments in mental health services in poor countries, says Florence Baingana, a Ugandan psychiatrist who advises the bank on mental health issues. (Baingana says she personally believes such investments are warranted.) Convincing the skeptics will require demonstrating the economic costs of untreated illness more clearly and countering the persistent view that a person with a mental disorder will never function at a normal level, Baingana says: “When we can show that people with neuropsychiatric disorders can be productive, then

we will have greater interest.”

Governments in the developing world are reluctant to devote resources to mental health—or even to ensure basic rights for people with mental illness, says Saxena. A mental disorder is grounds for denying the right to vote in some countries; in others, it can be grounds for annulling a marriage. Conditions in many government-run asylums are deplorable. In September 2005, the Washington, D.C.–based Mental Disability Rights International released a report documenting the use of electroconvulsive therapy, without anesthesia or muscle relaxants, as punishment for unruly patients in a Turkish psychiatric hospital.

Often it takes a disaster to get mental health on the agenda. For example, a fire at Erwadi Dharga, a religious healing center in southern India, in 2001 claimed the lives of 25 mental patients who’d been chained to their beds. It made international headlines. Afterward, India cracked down on private asylums—inspecting and certifying them according to laws that have been on the books for years but were rarely enforced. More recently, the Asian tsunami spurred countries in the region to improve mental health services (*Science*, 12 August 2005, p. 1030). The evidence may be there, but until something terrible happens, most politicians don’t think about mental health, Saxena says. “Our job,” he says, “is systematically shaming them into thinking about it.”

—GREG MILLER

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