Who Needs Psychiatrists?

Mental health care is desperately needed throughout the developing world. An Indonesian province is testing an unconventional approach

SIGLI, ACEH PROVINCE, INDONESIA—Nurdin Jalil spent nearly 20 years, almost half his life, in a brick cell built for him by his own family. They forced him to live there because they were afraid of him, as were others in this town near the northern tip of Sumatra. Jalil has schizophrenia, and he attacked another villager with a knife, thinking the other man was a pig. His cell still stands in the family's yard not far from the house. It is about 2 by 3 meters and has a small window and a door, both of which are covered with a grid of metal bars. A small pit in the middle of the concrete floor served as a toilet.

When Laila Kusumawati, a nurse from the nearby district hospital, first encountered Jalil in 2006, he was in bad shape. His hair and nails had grown long, and he was filthy. Kusumawati recalls him lunging at the door to his cell, trying to attack her when she came close. After years of confinement, his foot had atrophied. "He walked, I'm sorry to say this, like a monkey," Kusumawati says. She helped arrange for Jalil to be brought to the hospital, where he got cleaned up and received antipsychotic medications. Today, he lives inside his family's house and is taking religious studies classes. Clean-shaven and neatly dressed, he says he hopes one day to work again as a fisherman.

Jalil's confinement was born not of cruelty but a lack of alternatives. The nearest psychiatrists work at the crowded mental hospital in Banda Aceh, the provincial capital, a half-day's bus ride over winding mountain roads. For many people in this rural province of fishers and farmers, the roundtrip for a patient accompanied by a family member can cost nearly a month's earnings. Antipsychotic medicine can cost that much again. Many families turn instead to local healers, whose methods include chanting, praying, whipping patients, and poking them with burning sticks to expel bad spirits. When these remedies fail, fam-

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Grass roots. At a village in Aceh, a community mental health nurse (*far left*) leads an educational program on stress.

ilies resort to confinement, or *pasung*, as it is called here. In 2010, at least 200 mentally ill people in Aceh, a province of 4.5 million people, were restrained in chains, stockades, or improvised cells like Jalil's.

This bleak picture may be changing, thanks to efforts started in the wake of the devastating 2004 earthquake and tsunami. Provincial health authorities, aided by foreign advisers, are creating a community mental health program that shifts much of the work traditionally done by psychiatrists to general practitioners, nurses, and even village volunteers. This program is the reason Kusumawati found Jalil, and it has resulted in the treatment of tens of thousands of people with mental illness in Aceh, including more than 100 other *pasung* patients.

Whether nonpsychiatrists can provide adequate psychiatric care is an open question. Only a few careful studies exist. The results are encouraging, but scaling up from controlled clinical trials to the real world is no small challenge. Aceh province is one of several places in the developing world where the concept is being tested on a large scale. If these projects succeed, they could be a model for other developing countries, where mental illness is an enormous, if largely underappreciated, cause of disability and financial hardship. Fewer than a quarter of the people with severe mental illness in low- and middle-income countries receive any treatment, according to the World Health Organization (WHO). Psychiatrists are scarce and often concentrated in overcrowded urban hospitals, where human-rights abuses are all too common. "Up until recently, the story was always a negative one. You know, 'Look at all these terrible things that are happening,' " says Harry Minas, who directs the Centre for International Mental Health at the University of Melbourne in Australia and has helped develop the program in Aceh. "I think we can now start telling some stories about successes."

Online

sciencemag.org

Slideshow and podcast interview (http://scim.ag/Indo_6074) with author Greg Miller.

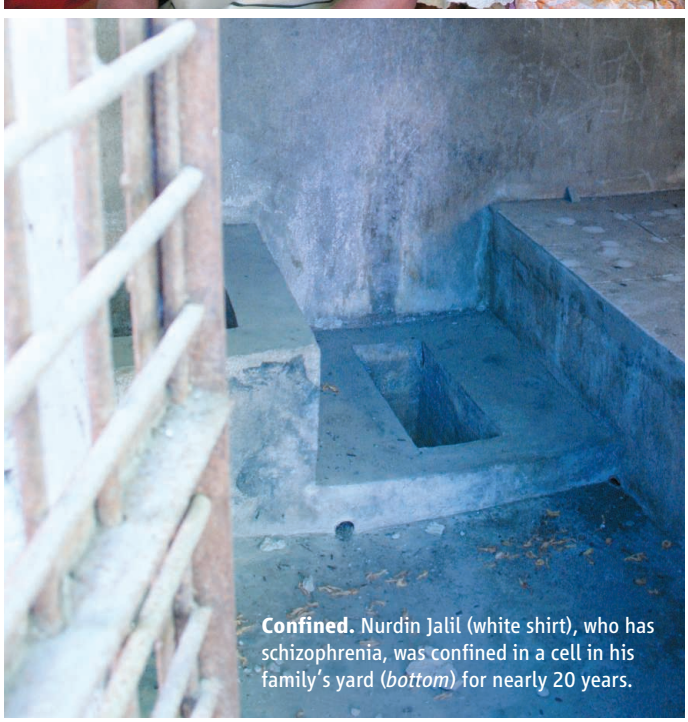
After the flood

The tsunami, which killed as many as 160,000 people and displaced more than 500,000 in Aceh, was not the province's first taste of tragedy. In the preceding 30 years, armed conflict between Indonesian government soldiers and Acehnese separatists claimed at least 15,000 lives. (Some estimates are more than twice that number.) But the deaths are only part of the story, say Byron and Mary-Jo Good, medical anthropologists at Harvard University who have worked in Indonesia since 1996. Sponsored by the International Organization for Migration, the Goods led a survey of psychological trauma in Aceh after the signing of a peace accord in 2005. In three districts heavily affected by the conflict, 78% of people reported witnessing violence, 38% reported having to flee a burning building, and 41% reported having a friend or family member killed. Roughly two-thirds of respondents reported lasting symptoms of depression and anxiety.

Although it was the tsunami that provided the impetus for establishing a mental health system in Aceh, many people here say the conflict has been a greater detriment to the mental health of the population. In this devoutly Muslim region where Shariah police enforce bans on alcohol, gambling, and immodest dress, many people see the tsunami as divine retribution for wicked behavior. The conflict is viewed as more traumatic because it came at the hands of compatriots. "Suffering because of the conflict is unforgivable," says Irwandi Yusuf, the governor of Aceh province. "Suffering because of the tsunami is, let's say, God's make." In part because the Indonesian government barred foreigners from Aceh during the conflict, the magnitude of suffering it caused attracted little notice internationally.

The tsunami was a different story. Perhaps because of its timing—televised images of devastation and loss beamed into living rooms around the world just as millions of families in the West were celebrating the Christmas holiday—the disaster triggered a massive outpouring of international concern for the survivors' psychological well-being. Hundreds of foreign aid groups poured into the affected countries with little knowledge of the local culture and, in some cases, outdated ideas about disaster mental health (*Science*, 12 August 2005, p. 1030). Many of these early efforts were ineffective or even damaging, says Benedetto Saraceno, a professor of global health at the New University of Lisbon, who was WHO's director of mental health in Geneva at the time. Despite the initial chaos, Saraceno saw an opportunity in Aceh to create a mental health system that would last beyond the immediate aftermath of the tsunami. He invited Minas to meet him in Jakarta to develop a plan.

Both men had worked in Bosnia during that war and wanted to avoid the mistakes they'd seen there, and saw happening again in Aceh in the



Confined. Nurdin Jalil (white shirt), who has schizophrenia, was confined in a cell in his family's yard (*bottom*) for nearly 20 years.

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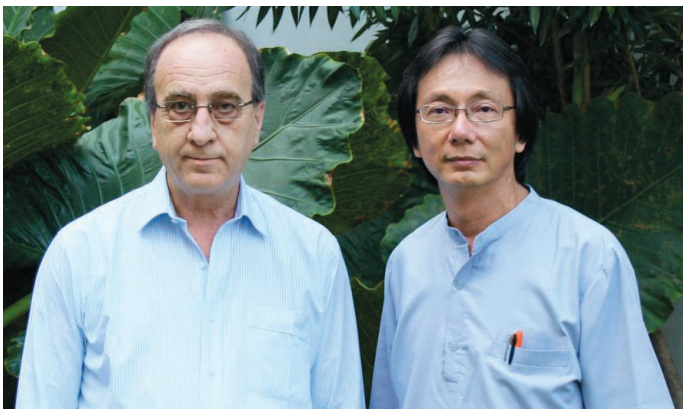

Advocates for change. Harry Minas (*left*) and Albert Maramis are proponents of the community mental health project in Aceh.

weeks and months after the tsunami. "In Bosnia, one of the things that was most striking to me was seeing all these trauma centers that had been built and were now empty, with weeds growing up through the floor," Minas says. "They worked for a while, but they were separate from the government health system and couldn't be sustained."

The report Saraceno and Minas prepared for WHO estimated that 100,000 people in Aceh would suffer lasting psychological problems from the tsunami, on top of roughly 60,000 who had preexisting mental illness. But aside from the beleaguered mental hospital in Banda Aceh with its five psychiatrists, mental health care in the province was all but nonexistent.

Momentum for mental health

Aceh was not alone in its neglect of mental health. Until recently, the topic has scarcely been on the radar of health ministries in poor countries. Nor has it factored into major international initiatives like the Gates Foundation's Grand Challenges in Global Health or the Millennium Development Goals set out by the United Nations. The reason is fairly simple, says Shekhar Saxena, who succeeded Saraceno as WHO's director of mental health and substance abuse: "They focused on death." It's undeniable that infectious diseases such as malaria, AIDS, and tuberculosis kill far more people. But mental, neurological, and substance abuse disorders rival these killers as causes of disability and barriers to economic development (*Science*, 27 January 2006, p. 458). WHO estimates that mental disorders account for a quarter to a third of all years lived with a disability in low- and middle-income countries. "Obviously, death has to be prevented," Saxena says. "But lives also have to be improved."

A movement for global mental health seems to be gaining momentum. Last July, an international group of researchers and clinicians published their own set of Grand Challenges in *Nature*, calling for more research and policy changes to improve mental health care. Funding agencies have taken note. Last year the governments of Canada, the United States, and the United Kingdom announced initiatives that commit millions of dollars for research on global mental health (see table, below).

Much of this research will focus on the feasibility of shifting more mental health care to less specialized, less expensive, and more abundant health workers, says Pamela Collins, who heads an office on global mental health research launched in 2010 by the U.S. National Institute on Mental Health. In wealthy countries, using less specialized workers could reduce health care costs and expand care into underserved areas, she says. In poor countries, it may be the only viable option. In Indonesia, for example, even tripling the number of psychiatrists trained each year would not build their ranks to European levels until well beyond 2050 (see graphic, left panel, p. 1297). That's why authorities in Aceh have decided to try something different.

It takes a village

At a village meeting hall in Geulumpang Boron, on the east coast of Aceh, a small crowd has gathered to hear a presentation by nurse Fitrissani from the local *puskesmas*, or health clinic. They leave their shoes by the door and roll out straw mats to sit on. The hall has no furniture, but its cement walls and tile floor offer welcome relief from the tropical sun. Bowls of fried plantain strips and bottles of water are passed around. Today's topic is how to cope with stress, and the group of mostly women seems to be paying close attention, volunteering their own experiences when Fitrissani asks for examples of stressful events they've encountered and how they've dealt with them.

Community mental health nurses like Fitrissani are the backbone of the program in Aceh. They receive an initial 10 days of training in diagnosis and basic counseling from visiting teams of nurses and psychiatrists from hospitals, universities, and government institutions in Aceh and elsewhere in Indonesia. Nurses who complete the entire program receive an additional 4 months of part-time training. The nurses in turn train cadres, village volunteers, who act as mental health sentries for their community. Nurses visit the villages once or

Investing in Global Mental Health Research

Integrated Innovations for Global Mental Health
In July 2011, the Canadian government announced $20 million in funding for 15 to 25 "bold, transformational proposals to tackle the issue of mental health in developing countries." Awards should be announced by the end of this summer.

Collaborative Hubs for International Research on Mental Health in Low- and Middle-Income Countries
In September 2011, the U.S. National Institute of Mental Health announced the first awardees in this initiative, and it plans to announce more later this year. The first three hubs, based in Latin America, Africa, and South Asia, will each receive $2.5 million to $3.5 million over 5 years for research on how to expand access to mental health care.

PRogramme for Improving Mental health carE (PRIME)
In May 2011, the U.K. Department for International Development awarded $9.4 million to a program led by Crick Lund at the University of Cape Town in South Africa that will train general practitioners and nurses to deliver mental health care in Ethiopia, India, South Africa, Uganda, and Nepal, using plans developed by the World Health Organization's Mental Health Gap Action Programme.

The Gulbenkian Global Mental Health Platform
In December 2011, the Portuguese-based Calouste Gulbenkian Foundation announced an initiative that will provide $2.6 million for research in three areas: connections between mental illness and other noncommunicable diseases, strategies for shifting mental health care from hospitals to communities in low- and middle-income countries, and protecting the human rights of people with mental disabilities.

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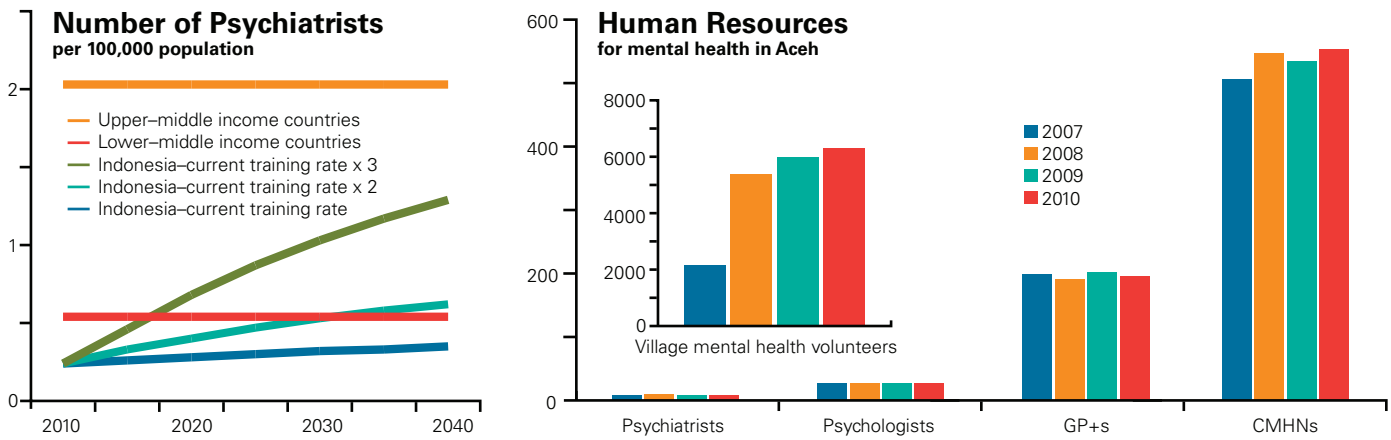
twice a week to check in with their cadres and lead educational programs like the one today on stress. If someone needs more specialized help, they will bring them to the community health center to see a general practitioner trained by the visiting psychiatrists who can prescribe a limited list of psychiatric drugs. For now, the most severe cases still must go to the mental hospital in Banda Aceh.

While Fitrissani talks with the women, a smaller number of men sit around the edges. One of them is Mahdi Abdullah, the village leader. He has intense brown eyes and a thick black mustache, and wears two large oval rings on his right hand. It's hard to make a good living here, he says. The primary occupation is growing rice. Aside from that, some men find occasional work doing carpentry or other skilled labor. Before the community mental health program started a few years ago, Abdullah says, mentally ill people and their families had an especially hard time. Other villagers would not only shun the patient but also refuse sometimes to do business with the rest of the family.

The presence of Indonesian troops during the conflict made things worse, Abdullah says. He motions to a man in a green shirt sitting nearby. He is in his early 30s and is rocking slightly, staring vacantly at the floor. Abdullah says the man has been sick for as long as anyone can remember. But his condition deteriorated after he was beaten—twice—by Indonesian soldiers because he refused or was unable to answer their questions. He stopped working, which worsened the already tenuous economic situation for his mother and grandmother, with whom he lives.

Abdullah says he's grateful for the mental health program and the changes it has brought to Geulumpang Boron. Villagers now do more to help patients and their families, he says. The man who was beaten by soldiers has received medicine from the nurses (although they say he doesn't always take it), and Abdullah says he now has a job cutting grass to feed another villager's cows.



Task shifting. Even at triple the current training rate for psychiatrists (green line, left panel), it would take decades for Indonesia to catch up to upper-middle–income countries. In Aceh province, an effort is under way to shift some tasks to more abundant health workers (right panel), including general practitioners and nurses with extra mental health training (GP+s and CMHNs, respectively). Prior to 2005, Aceh had five psychiatrists and no other human resources for mental health.

(GRAPH SOURCE CREDIT) HARRY MINAS

The doctor won't see you now

Across Aceh, hundreds of general practitioners and nurses have received mental health training since the tsunami, and they have trained thousands of village volunteers (see graphic, right panel, above). Nearly 85% of the community health clinics now have at least some staff with mental health training. In 2010, they saw 28,572 mental health cases, the majority of which previously would have gone untreated, Minas says.

But how effective is the treatment patients receive? Some psychiatrists are skeptical. Sasanto Wibisono, a professor emeritus and former head of psychiatry at the University of Indonesia in Jakarta, agrees that giving nurses and general practitioners mental health training is a good idea, but he questions having them substitute for psychiatrists. "To overcome a critical situation, it's okay," Wibisono says. But in the long run, he worries that patients treated by nonspecialists won't receive the same quality of care.

Byron Good defends the use of nonpsychiatrists in principle but cautions that it's not a simple fix. "This approach is called for because it seems to all of us the only possible way to provide such care" in poor countries, he says. But so far, he says, there have been "quite few examples of real, evidence-based success that is sustained beyond small, initial pilot projects by highly committed groups." For such a system to work in the long run, doctors and nurses must receive high-quality training and a regular supply of medications, and they should spend a significant portion of their time doing mental health work so that they become proficient at it, Good says. But he adds, "Those conditions are too seldom met."

The project in Aceh does not have funding to assess patient outcomes, but a handful of recent clinical trials with nonpsychiatrists in Chile, Uganda, and other countries have yielded encouraging results. The largest trial to date was conducted in Goa, India, by a psychiatrist named Vikram Patel and his colleagues. Patel is a leading figure in the global mental health movement, and he splits his time between the London School of Hygiene and Tropical Medicine and Sangath Centre, a mental health nongovermental organization he founded in Goa. The researchers screened patients at 12 government-run clinics and 12 private doctors' offices for common mental problems such as depression and anxiety. In a 29-month period, 2796 people who tested positive enrolled in the trial. Half of the patients, selected at random, received routine care from the general practitioners at whichever clinic or doctor's office they'd gone to.

The other half received additional care from young local women trained as counselors. These lay counselors had no health training prior to an 8-week course in which they learned to educate patients about their symptoms and simple things they could do to alleviate them (breathing exercises for anxiety, for example). They also received training in interpersonal psychotherapy, a form of talk therapy that aims to improve mental health by resolving interpersonal problems, such as bereavement or loneliness. For more severe cases, in which the lay counselors' help was not enough, a doctor could prescribe anti-

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depressant drugs. Only patients who weren't improving or appeared to be a suicide risk—fewer than 2%—were referred to a psychiatrist.

The lay counselors made the biggest impact at the public clinics. After 6 months, 66% of the patients treated by lay counselors showed improvement in their symptoms, compared with 42% of the patients who'd received routine care at the same public clinics, the researchers reported in 2010 in *The Lancet*. At the private clinics, roughly 65% of patients in both groups improved. (It's possible that the private clinics that volunteered for the study provided better than average care to begin with, Patel says.) Patel is now consulting with the Indian government, which is considering incorporating lay counselors into the national health care system.

In rural Pakistan, psychiatrist Atif Rahman and colleagues enrolled 903 women with maternal depression in a trial. Half of the mothers, chosen at random, received standard care, including visits from "Lady Health Workers," community health workers trained in maternal and child health care. The other half received the same number of visits from Lady Health Workers who had received a short course in basic cognitive behavioral therapy that taught them to listen nonjudgmentally to the mothers' problems and gently guide them toward healthier ways of thinking. A year later, 59% of the mothers in the control group were still depressed, compared with 27% of the mothers treated by the specially trained Lady Health Workers, Rahman and colleagues reported in 2008 in *The Lancet*.

Pakistan has about 350 psychiatrists for a population of 175 million, but there are about 150,000 Lady Health Workers, Rahman says. They earn roughly one-sixth the salary of a psychiatrist, but Rahman says that's not the main point. "I don't see it as [just] a cheaper alternative to specialist care," he says. Instead, he argues, nonspecialists who work in the communities where they live, when properly supervised, can provide more effective care than specialists alone can. If this model gains traction, psychiatrists will find themselves playing a different role than they have in the past, Patel says. They will see fewer patients—only the toughest cases—and spend more time training and managing less specialized health workers.

Too many people. The mental hospital in Banda Aceh, once the only resource for mental health care in the province, remains crowded beyond its capacity.

The findings by Patel, Rahman, and others have been influential in persuading WHO to advocate training for less specialized caregivers as part of its Mental Health Gap Action Programme, launched in 2008, which aims to help developing countries expand mental health care. The organization is helping several countries—Ethiopia, Nigeria, Jordan, and Panama, among others—prepare their primary health systems to deliver mental health care, Saxena says.

The road ahead

Today in Banda Aceh, only a few visible reminders of the disaster remain. A giant power generator barge, untethered from its moorings by the tsunami, remains where the floodwaters carried it, in a residential neighborhood 3 kilometers inland. A monument in a field that abuts the airport road marks a mass grave for tsunami victims. But houses and roads have been rebuilt, and the cafes and night markets are bustling.

The Norwegian Red Cross has renovated the provincial mental hospital, which flooded in the tsunami, and it's once again a busy place—perhaps too busy. In one ward, scores of men are packed into an open room with spartan beds and bars on the windows. Most mental hospitals in Indonesia are like this: "a big room with too many people," says Albert Maramis, an Indonesian psychiatrist who works for WHO in Jakarta and was stationed in Aceh after the tsunami. During a visit last fall, Maramis was dismayed to see that most patients were locked in their rooms, contrary to international standards for the human rights of patients.

Conditions in Indonesia's mental hospitals need to improve, Maramis and others say, and they have backing from the country's top mental health official, Irmansyah (who, as many Indonesians do, uses one name). But he says his ultimate goal is to establish community-based mental health programs so that fewer patients ever set foot in a mental hospital. Irmansyah applauds the efforts in Aceh, and he says other provinces are interested in replicating them. But he notes that Aceh benefited from the huge influx of foreign aid money after the tsunami. "If you want to copy that model, you have to modify it" to make it more affordable, he says.

Even in Aceh, maintaining momentum won't be easy. In Bireuen, everyone from the village volunteers to the director of the district hospital says they are dedicated to the cause but can only do so much without more training and support. Mursyidah Lathief, a general practitioner at the district hospital, says the mental health training she received from Maramis and his colleagues in Jakarta a few years ago was invaluable. But that experience is a fading memory. "We need regular training like this," she says. The nurses say the same. In Bireuen, several of them work without pay. Community mental health in Aceh clearly has a long way to go.

But if such programs do prove successful, the implications could be far-reaching. Saxena notes that even in wealthy countries, 50% of people with depression don't get treatment. In January, the WHO executive board passed a resolution committing all its member nations—rich and poor alike—to develop strategies for expanding and improving mental health care. WHO believes nonpsychiatrists can, and must, play a role. "The world is becoming more ready for these changes," Saxena says.

Patel thinks this model could work in other areas of medicine, too, as it already does to some extent in child and maternal health. But he adds that research is needed to identify which interventions can be delivered safely and effectively by nonspecialists. The answers are urgently needed in poor countries where money and medical specialists are scarce, but they're no less relevant in rich countries where health care costs are skyrocketing, he says: "There's a really interesting question here of what can the developed world learn from these experiments born out of necessity?"

In Aceh, the experiment is just beginning. **–GREG MILLER**

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