NATURE | COMMENT

# Grand challenges in global mental health

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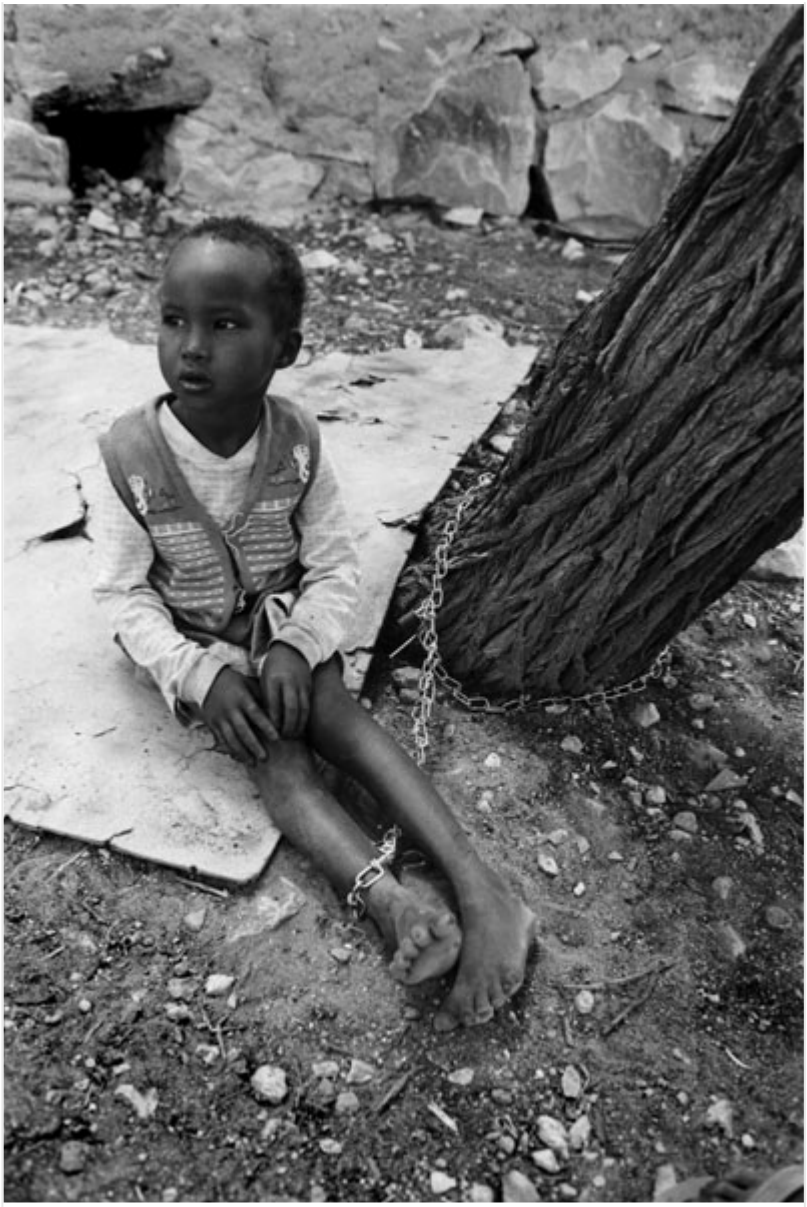
**A consortium of researchers, advocates and clinicians announces here research priorities for improving the lives of people with mental illness around the world, and calls for urgent action and investment.**

**Subject terms:** Health and medicine Neuroscience Developing world Policy

Schizophrenia, depression, epilepsy, dementia, alcohol dependence and other mental, neurological and substance-use (MNS) disorders constitute 13% of the global burden of disease (Table 1), surpassing both cardiovascular disease and cancer[1]. Depression is the third leading contributor to the global disease burden, and alcohol and illicit drug use account for more than 5% (ref. 2). Every seven seconds, someone develops dementia[3], costing the world up to US$609 billion in 2009 (ref. 4). By 2020, an estimated 1.5 million people will die each year by suicide, and between 15 and 30 million will make the attempt[5].

**Table 1: Global burden of mental, neurological and substance-use (MNS) disorders***

The absence of cures, and the dearth of preventive interventions for MNS disorders, in part reflects a limited understanding of the brain and its molecular and cellular mechanisms. Where there are effective treatments, they are frequently not available to those in greatest need. In 83% of low-income countries, there are no anti-Parkinsonian treatments in primary care; in 25% there are no anti-epileptic drugs[6]. Unequal distribution of human resources — between and within countries — further weakens access: the World Health Organization's European region has 200 times as many psychiatrists as in Africa[7]. Across all countries, investment in fundamental research into preventing and treating MNS disorders is disproportionately low relative to the disease burden[8].



*H. TIMMERMANS/GLOBAL INITIATIVE ON PSYCHIATRY*

Improving treatment for children with mental illness, like this girl in Somalia, is an urgent priority.

To address this state of affairs, the Grand Challenges in Global Mental Health initiative has identified priorities for research in the next 10 years that will make an impact on the lives of people living with MNS disorders. The study was funded by the US National Institute of Mental Health (NIMH) in Bethesda, Maryland, supported by the Global Alliance for Chronic Diseases (GACD), headquartered in London. Answers to the questions posed will require a surge in discovery and delivery science. We use the term 'mental health' as a convenient label for MNS disorders. We exclude conditions with a vascular or infectious aetiology (such as stroke or cerebral malaria), because these fell within the scope of the two previous grand challenges initiatives — in global health and in chronic non-communicable diseases[9].

This initiative differs from previous priority-setting exercises for mental health[10, 11, 12] in four ways. First, its scope is global. Second, it is the first to employ the Delphi method[13], a structured technique using controlled feedback to arrive at consensus within a dispersed panel of many participants. Third, it covers

the full range of MNS disorders. Finally, the effort hopes to build a wide-ranging community of research funders — much as the challenge for non-communicable diseases led to the creation of the GACD.

**Setting priorities**

The prioritization exercise assembled the largest international Delphi panel so far on the subject. An executive committee of leaders of key funding agencies provided broad oversight. A scientific advisory board comprising leaders in the relevant scientific disciplines guided the process. And an administrative team from the NIMH worked with the chairs of the committee and advisory board to coordinate communication and data analysis.

The advisory board nominated 594 researchers, advocates, programme implementers and clinicians; 422, working in more than 60 countries, agreed to participate. Researchers in genetics and genomics, neuroscience, basic behavioural science and neurodevelopment made up just over one-third of the panel. Mental-health services researchers constituted another quarter, and a further third were clinical researchers and epidemiologists (see Supplementary Figs 1–3).

In Round 1, panel members were asked to respond to the question “What are the grand challenges in global mental health?” by listing up to five areas they considered to be top priorities. As in previous initiatives[14, 15], a 'grand challenge' was defined as “a specific barrier that, if removed, would help to solve an important health problem. If successfully implemented, the intervention(s) it could lead to would have a high likelihood of feasibility for scaling up and impact.” Round 1 yielded 1,565 challenges.

These were distilled by the administrative team and chairs of the executive committee and advisory board into a shorter list of 154 unique challenges from which panellists selected their top 40 in Round 2 (Supplementary Table 1). The top 25 challenges from this list are shown in Table 2. Round 3 asked panellists to rank each challenge on a four-point scale for: ability to reduce disease burden; impact on equity; immediacy of impact; and feasibility (see Supplementary Methods). To arrive at the final ranked master list of grand challenges, individual rankings for each challenge were weighted, summed across all four criteria, and divided by the total number of responses (Supplementary Table 3).

**Table 2: Grand challenges for MNS disorders**

**The list**

The 25 grand challenges in Table 2 run the research gamut from preclinical questions into the aetiology and treatment of MNS disorders, to implementation and policy needs to scale up effective interventions. All the challenges emphasize the need for global cooperation in the conduct of research to create shared access to data, expertise and capacity-building opportunities. Children emerge as requiring particular attention for prevention and care. Most mental disorders involve developmental processes, so reducing the duration of untreated illness by focusing resources on the earliest definable clinical stage of illness could revolutionize treatment. Similarly, it is imperative that we explore the role of prenatal exposures and develop interventions to reduce the long-term negative impact of low childhood socioeconomic status on cognitive ability.

The challenges capture several broad themes. First, the results underscore the need for research that uses a life-course approach. This approach acknowledges that many MNS disorders either begin or manifest in early life, and is equally attentive to risk factors and disorders affecting children and the

elderly. Efforts to build mental capital — the cognitive and emotional resources that influence how well an individual is able to contribute to society and experience a high quality of life — could also mitigate the risk of disorders such as depression, substance-use disorders, bipolar disorder and dementia[16].

Second, the challenges recognize that the suffering caused by MNS disorders extends beyond the patient to family members and communities. Thus, health-system-wide changes are crucial, together with attention to social exclusion and discrimination. At the same time, research into systems interventions, such as integrating care for MNS disorders into chronic-disease care, could transform health services and reduce costs.

Third, the challenges underline the fact that all care and treatment interventions — psychosocial or pharmacological, simple or complex — should have an evidence base to provide programme planners, clinicians and policy-makers with effective care packages. Finally, the panel's responses underscore important relationships between environmental exposures and MNS disorders. Extreme poverty, war and natural disasters affect large swathes of the world, and we still do not fully understand the mechanisms by which mental disorders might be averted or precipitated in those settings.

*T. DIRVEN/PANOS*

Women in Priluki psychiatric hospital, Ukraine.

**Next steps**

There have been some major advances in our understanding of the aetiology and treatment of MNS disorders. Future breakthroughs are likely to depend on discoveries in genomics and neuroscience, in tandem with exploration of the role of sociocultural and environmental contexts. The top five challenges ranked by disease-burden reduction, impact on equity, immediacy of impact, and feasibility should serve as a starting point for immediate research and prioritization of policies (see bold lines in Table 2).

Action on all the challenges will require long-term investment. Substantial research progress can be achieved in the next ten years if funding begins immediately. Already, the NIMH's initiative, Collaborative Hubs for International Research in Mental Health, has committed to support research on the use of non-specialist mental health-care providers and research training in low- and middle-income countries. But a wider set of stakeholders must also be engaged, particularly in problems that require integrated research and policy interventions.

The WHO should disseminate information on these challenges to its member countries' health ministries and research councils to shape research and action priorities. Given the intimate relationship between economic and social development and the needs of people with MNS disorders, the World Bank, regional development banks, national development agencies, foundations, non-governmental organizations and

the global business community should all participate in addressing the challenges.

Researchers and funders have tremendous responsibility in this context. Consortia and networks, advocacy organizations, universities and their partners should organize their activities around one or more of the goals and the attendant grand challenges. The leaderships of the Grand Challenges in Global Mental Health, the GACD and their partners will meet in October to develop a strategy for regular monitoring of progress.

Even incremental progress in addressing the grand challenges in global mental health could lead to significant economic and quality-of-life benefits — including reductions in inappropriate use of health care and increased productivity for years to come[17] — that would far outweigh investment costs. Although the greatest challenge — the elimination of MNS disorders — may not be attainable within the next 10 years, the research suggested above must be conducted forthwith.

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**On behalf of the Scientific Advisory Board and the Executive Committee of the Grand Challenges on Global Mental Health.**

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## Supplementary information

**References** **Author Information** Supplementary Information **Comments**

**PDF files**

1. Supplementary Information (1.2M)
   This file contains Supplementary Methods, a Supplementary Discussion, Supplementary Figures 1-3, Supplementary Tables 1-3 and Supplementary Notes.

## Comments

**References** **Author Information** **Supplementary Information** Comments

2011-07-07 02:37 AM

**C Lickwar said:** Our "increasing mental sickness" may find expression in neurotic symptoms. These symptoms are conspicuous and extremely distressing. But "let us beware," says Dr. Fromm, "of defining mental hygiene as the prevention of symptoms. Symptoms as such are not our enemy, but our friend; where there are symptoms there is conflict, and conflict always indicates that the forces of life which strive for integration and happiness are still fighting." The really hopeless victims of mental illness are to be found among those who appear to be most normal. "Many of them are normal because they are so well adjusted to our mode of existence, because their human voice has been silenced so early in their lives, that they do not even struggle or suffer or develop symptoms as the neurotic does." They are normal not in what may be called the absolute sense of the word; they are normal only in relation to a profoundly abnormal society. Their perfect adjustment to that abnormal society is a measure of their mental sickness. These millions of abnormally normal people, living without fuss in a society to which, if they were fully human beings, they ought not to be adjusted, still cherish "the illusion of individuality," but in fact they have been to a great extent deindividualized. Their conformity is developing into something like uniformity. But "uniformity and freedom are incompatible. Uniformity and mental health are incompatible too. . . . Man is not made to be an automaton, and if he becomes one, the basis for mental health is destroyed." Aldous Huxley (Erich Fromm)

2011-08-16 04:55 AM

**Neeraj Bhala said:** Grand challenges in preventing alcohol-related harms

We commend the collaborative efforts of the Grand Challenges in Global Mental Health team in identifying research priorities in the fields of mental, neurological and substance-use (MNS) disorders. (1) We note particularly the global burden due to alcohol-use disorders, which is the 2nd leading cause of MNS disorders worldwide(and in low- and middle-income countries). Whilst the

grand challenges exercise is excellent in drawing attention to the breadth of issues in the arena of global mental health, we believe it would pay dividends to highlight in greater depth, factors which can be influenced. In particular, tackling alcohol-related harms would reap benefits in both mental and physical health internationally.

As well as mental health, excessive alcohol also has deleterious effects on other chronic diseases, particularly liver cirrhosis and some cancers. (2) The phenotypes of alcohol-related harms undoubtedly vary substantially? in Russia, for example, alcohol-associated excesses accounted for around half of all deaths of men aged 15-54 years in one large-scale study. (3) Whilst alcohol-use disorders may not account for the same extreme burden in other regions, the absolute effects are huge, with an estimated 3.8% of all global deaths and 4.6% of global disability-adjusted life-years attributable to alcohol. (2) As the Grand Challenges allude to, the lack of reliable information on MNS disorders (and specifically relations with alcohol) means this could be an underestimate of the global burden.

One of the key reasons we suggest alcohol-use disorders are particularly worthwhile focussing on is that there is an established evidence-base on interventions to reduce harms. Policies regulating the environment in which alcohol is marketed (particularly its price and availability) are effective in reducing its harms.(4) Moreover, as well as population-based strategies, strengthening the resources and training of health professionals in alcohol-use disorders will be required. Of course, tackling alcohol-related harms cannot be left to the mental health community alone, and will require the concerted global efforts of all physicians and public health practitioners. Other preventable hazards such as tobacco, obesity and blood pressure are relevant to chronic non-communicable diseases, (5) but alcohol-related harms warrant especial consideration as they constitute a grand challenge for physical and mental health globally.

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