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# From "madness" to "mental health problems": reflections on the evolving target of psychiatry

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There was a time when the target of the psychiatric profession was very clear and widely accepted. It was "madness", that is, a few patterns of behaviour and experience which were obviously beyond the range of normality.

In the perception of part of the public opinion, of several colleagues of other medical disciplines, and paradoxically of some fervent critics of old asylums, this traditional target of psychiatry has remained unchanged: psychiatry deals with people who are "mad".

But the actual target of the psychiatric profession has changed dramatically in the past decades. It has become a range of mental disorders (or of "mental health problems", according to some official documents of international organizations), including several conditions which are obviously on a continuum with normality. Fixing a boundary between what is normal and what is pathological has consequently become problematic. This boundary is often determined on pragmatic grounds, or on the basis of "clinical utility" (i.e., prediction of clinical outcome and response to treatment), although this pragmatism may involve some tautology (in fact, requiring that a diagnostic threshold be predictive of response to treatment seems to imply that a condition becomes a mental disorder when there is an effective treatment available for it).

In this new scenario, psychiatry has become the focus of opposite pressures.

On the one hand, the profession is being accused to unduly pathologize ordinary life difficulties in order to expand its influence (e.g., 1,2). This criticism becomes harsher when the above-mentioned evolution of the target of psychiatry from "madness" to "mental health problems" is, in good or bad faith, ignored: pathologizing ordinary life difficulties becomes "making us crazy" (3). Of course, the argument is presented with greater emphasis when the perceived unduly "pathologization" occurs in children or adolescents, or when it is considered to be a consequence of an alliance between psychiatry and the pharmaceutical industry.

On the other hand, the psychiatric profession is being pressured to go beyond the diagnosis and management of mental disorders, acting towards the promotion of mental health in the general population (e.g., 4,5). Within this frame, especially in those countries in which community mental health services are most developed and psychiatrists are leading those services, there is a call for dealing with "mental health problems" which are not proper mental disorders, such as the serious psychological distress occurring as a consequence of a natural disaster or of the ongoing economic crisis. Furthermore, psychiatrists are being pressured to diagnose and manage proper mental disorders as early as possible, which means dealing with a variety of conditions that may be "precursors" or "prodromes" of those disorders, but more frequently are not, with the unavoidable risk to, again, pathologize situations that are within the range of normality.

The two Special Articles which appear in this issue of the journal (6,7) are both relevant to the above debate.

Indeed, the ongoing economic crisis is having a significant impact on the mental health of the population in many countries, especially where scarce social protection is available for people who become unemployed, indebted or poor due to the crisis. Mental health services are often called to intervene, in a situation of uncertainty and confusion about roles and competences.

A couple of recent episodes from my country, Italy, are emblematic in this respect. Last spring, a group of widows of entrepreneurs who had committed suicide, allegedly as a consequence of economic ruin, marched in an Italian town under the slogan "Our husbands were not crazy". "It was despair, not mental illness, which brought my husband to do that", one of them said (8). In the same period, in another Italian town, the widow of an entrepreneur who had committed suicide blamed the professionals of a mental health service because they had not hospitalized him compulsorily. They had found him worried about his economic problems, but they had thought he did not have a mental pathology. "He was depressed. They should have hospitalized him", the widow said (9).

So, psychiatry is being blamed on the one hand for unduly pathologizing and stigmatizing understandable psychological distress, and on the other for not pathologizing that same distress and not managing it as if it were proper mental disorder.

Equally emblematic is the ongoing discussion on "attenuated psychosis syndrome" and "juvenile bipolar disorder" (the former proposed for inclusion in the DSM-5; the latter never included in the DSM, despite considerable lobbying). On the one hand, the need is emphasized to diagnose and manage schizophrenia and bipolar disorder as early as possible, even before the typical clinical picture becomes manifest, in order to improve the outcome of those disorders; on the other, concern is expressed about the risks involved in false-positive diagnoses, especially in terms of societal stigma and self-stigmatization and of misuse of medications (e.g., 10,11).

This uncertainty and confusion is likely to persist for several years. In this situation, what the psychiatric profession mostly seems to need is a refinement of its diagnostic (especially differential diagnostic) skills. The detailed description of proper mental disorders provided by current diagnostic systems may not be sufficient, especially for psychiatrists working in a community setting. First, we may also need a description of ordinary responses to major stressors (such as bereavement, economic ruin, exposure to disaster or war, disruption of family by divorce or separation) as well as to life-cycle transitions (e.g., adolescent emotional turmoil). The current attempt, within the development of DSM-5, to describe "normal" grief as opposed to bereavement-associated depression, in order to guide differential diagnosis, is a first step in this direction. Second, we may need a characterization of the more serious responses to the above stressors which can come to the attention of mental health services although not fulfilling the criteria for any mental disorder. The serious and potentially life-threatening psychological distress related to economic ruin, in which shame and despair are the most prominent features and the diagnostic criteria for depression are often not fulfilled, is a good example. The current delineation of "adjustment disorders" in both the ICD-10 and DSM-IV is too generic and ambiguous to be useful for differential diagnostic purposes and as a guide for management.

Of course, other mental health professionals (and perhaps other professionals outside the health field) will have to collaborate with psychiatrists or even take the lead in those characterizations. This may hopefully contribute to the construction of a transdisciplinary, clinically relevant, body of knowledge in the mental health field, whose existence is at present questionable.

The characterization of the above "mental health problems" could guide the development of adequate interventions and community resources. On the one hand, in fact, there is the risk of an inappropriate extension of interventions used for proper mental disorders to the new emerging conditions (e.g., use of antidepressant medications for the understandable psychological distress related to economic ruin); on the other, there is the risk to reduce the intervention to the provision of practical advice (which in some contexts is likely to be entrusted to untrained volunteers) while differential diagnosis and professional management are also needed.

Proving that effective interventions are available for these emerging mental health problems will not, however, be sufficient. We will also need to convince the public opinion that there is an acceptable balance between the benefits provided by those interventions and the risks (in terms of societal stigma and self-stigmatization) of any mental health referral (12). This calls for a real integration of mental health care in the community (including active partnership with primary care workers, social services and relevant stakeholders) in parallel to the development of effective interventions. One or the other of these two elements is often emphasized, while in reality both of them are essential.

Finally, it cannot be ignored that, just as a consequence of the ongoing economic crisis, the human and financial resources of mental health services are being significantly cut down in many countries. These services may be unable to implement further activities at a time when they have difficulties to carry out their traditional ones. This argument was indeed put forward initially in some countries recently struck by natural disasters, such as Sri Lanka and Indonesia. But mental health professionals in those countries have been able to turn the emergency into an opportunity to convince administrators of the importance of mental health care for the society, so that the final outcome has been a growth as well as a better integration of mental health services. One could argue that the current economic crisis may represent in several countries an analogous opportunity to show how essential mental health care is for communities, and how flexible mental health services can be in addressing the emerging needs of those communities, if appropriately supported.

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# Actions to alleviate the mental health impact of the economic crisis

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*The current global economic crisis is expected to produce adverse mental health effects that may increase suicide and alcohol-related death rates in affected countries. In nations with greater social safety nets, the health impacts of the economic downturn may be less pronounced. Research indicates that the mental health impact of the economic crisis can be offset by various policy measures. This paper aims to outline how countries can safeguard and support mental health in times of economic downturn. It indicates that good mental health cannot be achieved by the health sector alone. The determinants of mental health often lie outside of the remits of the health system, and all sectors of society have to be involved in the promotion of mental health. Accessible and responsive primary care services support people at risk and can prevent mental health consequences. Any austerity measures imposed on mental health services need to be geared to support the modernization of mental health care provision. Social welfare supports and active labour market programmes aiming at helping people retain or re-gain jobs can counteract the mental health effects of the economic crisis. Family support programmes can also make a difference. Alcohol pricing and restrictions of alcohol availability reduce alcohol harms and save lives. Support to tackle unmanageable debt will also help to reduce the mental health impact of the crisis. While the current economic crisis may have a major impact on mental health and increase mortality due to suicides and alcohol-related disorders, it is also a window of opportunity to reform mental health care and promote a mentally healthy lifestyle.*

**Key words:** Mental health, economic crisis, suicide prevention, social policy

***(World Psychiatry 2012;11:139-145)***

The financial turmoil that began in 2007 has developed into a full-blown economic crisis in many countries. This crisis is likely to have a negative impact on health, especially mental health. The full health impact of the crisis remains to be seen, but reports of negative mental health effects have already emerged. For instance, an increase in suicide attempts has been reported in Greece (1), and increases in the rate of suicides following the onset of the recession have been observed in Ireland (2) and England (3). However, the outlook does not have to be so bleak. A recent World Health Organization (WHO) publication points out that the association between economic crises and many negative mental health outcomes is avoidable (4).

Societies can be more or less resistant to stressors, which can include both economic upturns as well as crises. The latter can destabilize public service budgets, with many consequences, including some on education, social welfare and health care systems. Policy choices can influence the impact of any economic recession on mental health outcomes. Unwise austerity measures in public services for children, families and young people may result in long-lasting and costly mental (and physical) health damages, and create an obstacle to economic recovery. Conversely, measures to ensure that social safety nets and supports are in place can increase the resilience of communities to economic shocks and mitigate the mental health impacts of fear of job loss, unemployment, loss of social status and the stress-related consequences of economic downturns (5).

This is because mental health depends upon a variety of socioeconomic and environmental factors (6). High frequencies of common mental disorders and suicide are associated with poverty, poor education, material disadvantage, social fragmentation and deprivation, and unemployment (7-9). Recessions can widen income inequalities in societies, which in turn increases the risk of poor mental health (10).

As people move down the socio-economic ladder due to loss of jobs and income, their health is at risk of being adversely affected (11). The number of households in high debt, repossession of houses and evictions is at risk of increasing as a result of the economic crisis. Protective factors will be weakened and risk factors will be strengthened.

## MENTAL HEALTH RISKS IN ECONOMIC DOWNTURNS

A substantial body of research signposts that additional mental health risks emerge in times of economic change. We know that people who experience unemployment and impoverishment have a significantly greater risk of mental health problems, such as depression, alcohol use disorders and suicide, than their unaffected counterparts (12,13). Men, in particular, are at increased risk of mental health problems (14) and death due to suicide (15) or alcohol use (16) during times of economic adversity.

There is evidence that debts, financial difficulties and housing payment problems lead to mental health problems (17-19). The more debts people have, the higher the risk of many common mental disorders (20,21).

Increases in national and regional unemployment rates are associated with increases in suicide rates (3,5,22). The least well educated are those at greatest risk of ill health after job loss (23). Pooled evidence calls for protective interventions targeting both newly and long-term unemployed, especially men with low educational attainment (23).

During recessions, social inequalities in health can widen (24). It is the poor – and those made poor through loss of income or housing – that will be hardest hit by the economic crisis (23). The crisis is likely to increase the social exclusion of vulnerable groups, the poor and people living near the poverty line (25). Vulnerable groups include children, young people, single parent families, the unemployed, ethnic minorities, migrants, and older people. Work from South Korea reported increasing income-related inequalities in suicide and depression over a 10-year period following an economic crisis, strengthening the argument for targeted investment in social protection supports (26).

### Economic crises put families at risk

Families as a whole also feel the effects of economic crisis. Poor families are especially hurt by cuts in health and education budgets. Family strain may lead to increases in family violence and child neglect. Children may also find themselves having to provide care and support for other family members.

The foundations of good mental health are laid during pregnancy, infancy and childhood (27). Mental health is promoted by a nurturing upbringing and a holistic preparation for life in pre-schools and schools by providing social and emotional learning opportunities (28). Cuts in preschool support and the educational system may have lifelong consequences on psychological well-being.

Economic stress, through its influence on parental mental health, marital interaction and parenting, impacts on the mental health of children and adolescents (29,30). The impact of extreme poverty on children may include deficits in cognitive, emotional and physical development, and the consequences on health and well-being may be life-long (31). Nation-wide population follow-up data from Finland, which experienced a severe economic recession in the beginning of the 1990s, reveals gloomy figures: at age 21 one in four of those born in 1987 had committed a criminal offence and one in five had received psychiatric care (32).

### Alcohol-related harms increase during downturns

In many countries, alcohol consumption is negatively associated with population mental health. For example, in Eastern Europe, alcohol consumption plays a considerable role in the suicide rate, especially in men (33).

In Russia, the societal changes seen after the collapse of the Soviet Union in 1991, as well as the breakdown of the rouble in 1998, were followed by increases in alcohol-related deaths (34). Likewise, high rises in unemployment have been linked to a 28% rise in deaths from alcohol use in the European Union (5).

Binge drinking and alcohol-related deaths tend to increase in many countries during economic downturns (35,36), creating a need for governments to upgrade alcohol control actions.

## MENTAL HEALTH RISKS CAN BE MITIGATED

Countries with strong social safety nets see smaller changes in the mental health of the population related to economic downturns (37). European data indicates that, in countries with good formal social protection, health inequalities do not necessarily widen during a recession (5). For instance, in Finland and Sweden, over a period of deep economic recession and a large increase in unemployment, health inequalities remained broadly unchanged and suicide rates diminished, possibly because social benefits and services broadly remained and buffered against the structural pressures towards widening health inequalities (38-40). These European findings are echoed by US data linking increased suicide rates with reductions in state welfare spending (41).

Reforms to social welfare to maintain or strengthen safety nets and taxation systems to reduce income inequalities potentially could help protect mental health. The collated data indicates that social protection responses are crucial in mitigating poor mental health in any economic crisis while high levels of income inequality are associated with poor mental health.

A holistic approach to the mental health challenges of the current economic crisis calls for interventions across several sectors. In addition to broad social welfare measures that go beyond mental health issues alone, the provision of mental health services in primary care, active labour market programmes, family support and parenting programmes, alcohol control, promotion of social capital and debt relief programmes constitute the cornerstones of successful policies to prevent mental health problems in the population. There is also an emerging evidence base on the cost-effectiveness of these actions.

### Accelerating mental health care reforms

Many countries are facing pressure from the international financial community to cut borrowing and public expenditure, which inevitably puts strain on their health and welfare budgets. Government expenditures on health are being squeezed and falling in real terms. Data on Organisation for Economic Co-operation and Development (OECD) countries indicate that overall health spending grew by nearly 5% per year in real terms between 2000 and 2009, but was followed by zero growth in 2010 (42). Major health service cuts have recently been seen in Greece (43). In spite of increased pressure on mental health services (44), these services are particularly vulnerable to cuts, as they usually lack a strong advocacy base to oppose them, contrary to physical illness services.

Improved responsiveness of health services to changes in the social, employment and income status of the population, and early recognition of mental health problems, suicidal ideas and heavy drinking will help reduce the human toll of recession. To meet the mental health challenges of the economic crisis, not only is protection of spending on mental health services required, but also restructuring of services to meet the needs of the population. Well-developed community-based mental health services are linked to the reduction of suicides (45,46). An integrated care approach with a focus on service provision in primary care will increase access to mental health care, and shift the focus to prevention and early detection of mental health problems. The mental health care system must liaise with resilience-strengthening elements in the community, to create a comprehensive and accessible network. Perceived stigma is a barrier for help-seeking (47), and support services need have high acceptability.

Due to financial constraints, governments will inevitably have to review their welfare services. In many countries, mental health spending is still concentrated in psychiatric hospitals. The current financial crisis may create the urgency and strengthen courage to eliminate the fundamental problems in hospital-dominated health care delivery and increase access to community based services. Thus, increasing efficiency of services can go hand in hand with development of modern community-based mental health services. Sound financial incentives are, however, needed to support the provision of high-quality community care and optimal use of existing resources. One important challenge may be the need to continue to fund excess inpatient services at the same time as investing in other services during a transitional period (48). Linking funding to accreditation systems and provider performance assessments can help support a shift in emphasis away from institutional care (49).

Universal coverage of mental health services is a cornerstone in reducing the impact of the crisis, and is likely to restrain social inequalities in health (50). The current economic crisis provides an additional driver to review and develop the funding of mental health services to ensure access for all.

## Active labour market support for unemployed people

Active labour market programmes can reduce the mental health effects of recessions. These programmes aim at improving prospects of finding gainful employment and include public employment services, labour market training, special programmes for young people in transition from school to work, and programmes to provide or promote employment for people with disabilities.

In European Union countries, each additional 100 USD per head of population spending on active labour market programmes per year reduced by 0.4% the effect of a 1% rise in unemployment rate on suicides (5).

Active labour market programmes include group psychological support for unemployed people to promote mental health and increase re-employment rates (51,52). Cost-effectiveness evaluations of such interventions have reported savings for social welfare payers and employers alike, through increased rates of employment, higher earnings and fewer job changes (53).

Given the adverse economic impacts of unemployment for physical and mental health, there is a case for embedding these types of services routinely into redundancy packages provided by employers.

Special programmes for young people in transition from school to work and re-employment training for young people left unemployed can be of benefit. Apprenticeship-type training in regular educational settings offer most mental health benefits (54).

## Family and parenting support programmes

Family support programmes include support for the costs associated with raising children, as well as expenditure related to maternity and parental leave.

In European Union countries, each 100 USD per capita spending on family support programmes reduced by 0.2% the effect of unemployment on suicides (5). There is also a large body of literature indicating that investment in measures to support the well-being of parents and their children can be protective of mental health, with long-term economic gains outweighing short-term costs (55).

## Control of alcohol price and availability

The most effective and cost-effective policies include controls on the price and availability of alcohol (56). While sometimes politically challenging to implement, policy actions to increase the price of alcohol will result in a reduction in consumption and associated harm across the whole population (57). Alcohol policy, and particularly policy that increases the price of alcohol, will reduce deaths from alcohol use disorders.

Control policies should be supplemented by provision of services: heavy drinkers will benefit from delivery of brief interventions in primary care.

## Debt relief programmes

It is necessary to try to prevent people from becoming over-indebted as well as making it easier for them to pay their fair share and be able to return to a dignified and economically active life. This has been highlighted as a key area for action to protect mental health in public policy (58). Taking such action results in reduced distress and socio-economic benefits (59). In Sweden, people in high debt who had been granted debt relief had a better mental health than those who had not (59). A controlled trial of access to debt management services in England and Wales reported improvements in general health, anxiety and optimism (60). Use of debt advice services have also been associated with a reduction in the use of health care services (61).

There is a need for national programmes to strengthen cooperation and improve communication between health services and debt management agencies. Debt management advisers should be trained to refer clients to mental health care when needed (62). On the other hand, health services need to acknowledge the burden of over-indebtedness in clients and provide referral links to debt advice bureaus (63). Access to microcredit, through organizations such as credit unions, can also help (64).

There may be scope for looking at the provisions of bankruptcy laws in some countries and seeing whether they might also be reformed to try and protect mental health.

### Strengthening social capital

Social capital can be defined in different ways, but in general terms covers the resources available to individuals and society provided by social relationships or social networks.

In times of economic crisis, social capital can be an important protective factor. Social networks, as represented by trade unions, religious congregations and sport clubs, seem to constitute a safety net against the adverse effect of rapid macroeconomic changes (65). Participation in group activities and greater levels of perceived helpfulness within communities have been associated with better levels of mental health (66). In contrast, poor levels of interpersonal trust between individuals is associated with increased risk of depression (67).

### Responsible media coverage of suicides

Evidence indicates that highly sensationalized reporting of suicides, providing detailed descriptions of methods, can and does lead to "copy-cat" suicides. On the other hand, responsible reporting on suicides reduces copy-cat suicide (68,69), especially among adolescents (70). Media guidelines for reporting suicides and monitoring of stigmatizing media reports have been linked with reduced stigmatization in press and reduction of suicides (68,70).

In economic crises, increased media coverage on possible increases in suicides may thus have detrimental effects and contribute to a "snowball" effect. A close collaboration between media representatives and mental health experts as well as commonly agreed suicide reporting guidelines are needed to prevent media-related increases in suicides during times of economic hardship.

## BUILDING THE CASE FOR INVESTING IN MENTAL HEALTH

One reason for the apparent low funding priority and neglect given to mental health is the high level of stigma associated with mental health problems (71). Countering this stigma and discrimination remains one of the most critical challenges for improving mental health at a time of economic crisis, because this stigma may impact on the willingness of public policy makers to invest in mental health (72). Public surveys in some countries have indicated that mental health can be seen as a low priority in terms of safeguarding services in the face of budget cuts (73,74).

While economic crises may have mental health impacts, mental health problems have an increasingly significant economic impact in low, middle and high income countries (75). For instance, in European Union Member States, the economic consequences of mental health problems – mainly in the form of lost productivity – are conservatively estimated to be on average 3-4% of gross national product (76). Thus, mental health is an important economic factor. The shift from a manufacturing to a knowledge-based society emphasizes even more the importance of mental health for sustained productivity. Good population mental health contributes to economic productivity and prosperity, making it crucial for economic growth (77).

Demonstrating that spending on mental health has economic benefits can help governments justify new investments in mental health, as in the case of the mental health strategy in England (78). Investing in mental health actions, both within and external to the health care sector, provides resources and opportunities to reduce the risk of social exclusion and promote social integration. However, despite the availability of cost-effective interventions, the priority mental health receives in many health care systems is remarkably low (79). This may be because many of the above-mentioned economic benefits fall on sectors outside of the health system. It is crucial to communicate to Ministries of Finance that investment in mental health can have broad benefits for the public purse as a whole (80).

## EVERY CRISIS IS AN OPPORTUNITY FOR CHANGE

The current economic crisis presents an opportunity to strengthen policies that would not only mitigate the impact of the recession on deaths and injuries arising from suicidal actions and alcohol use disorders, but reduce the global health and economic burden presented by impaired mental health and alcohol use disorders in any economic cycle. It is important to remember that investment in supports for mental health will also have benefits in times of economic boom as well as bust, when there will inevitably be an uneven distribution of wealth gains and not all of the population will benefit, as was seen during the Celtic Tiger years in Ireland (81).

There are powerful public health and economic arguments for universal coverage of community mental health care, adequate social protection systems, active labour market programmes, family and parenting support, debt relief and effective alcohol control policy, which are strengthened by the present economic downturn. Governments could consider reorienting budgets to protect populations now and in the future by budgeting for measures that keep people employed, helping those who lose their jobs and their families with the negative effects of unemployment, and enabling unemployed people to regain work quickly. Business under strain may be able to help by offering reduced working hours or temporary sabbaticals from employment rather than making workers redundant. Governments could also consider strengthening their alcohol policies, in particular by raising the price of alcohol, or introducing a minimum price of alcohol. Such a policy would have a particular impact on reducing the harm done by risky and heavy episodic patterns of drinking.

Without detracting attention from the mental health risks of the current global economic recession, it needs to be noted that a recession may also contribute to positive lifestyle changes. Fewer hours spent at work may mean more leisure hours spent with children, family and friends. Less economic activity may contribute to a slower pace of life and strengthen social capital by providing more opportunities for civic participation and social networking. Iceland encountered a major financial and economic crisis in 2008. Some Icelanders did see the crisis as a “blessing in disguise for a nation that had lost its basic values to greed and narcissism”, offering a chance to “recover to become a more democratic, human and fair society” (82). Indeed, due to preservation of well-developed basic social welfare in Iceland even at the height of the crisis, reports indicate even positive impacts regarding health behaviours (83).

The policy decisions taken can either worsen or strengthen population health, and it is likely that options which promote population mental health will also support a faster economic recovery. Population well-being, i.e. mental capital, is a crucial prerequisite for a flourishing economy with high productivity.

The way out of the economic crisis is laid by the mental health bricks of population well-being. Important bricks are healthy families, solidarity with those struck by the crisis and accessible and equitable community mental health care. Well laid and cemented mental health bricks are crucial for a return to a healthy economy.

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SPECIAL ARTICLE

# Differential diagnosis of bipolar disorder in children and adolescents

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*Issues complicating the differential diagnosis of bipolar disorder in young people are discussed. They include: a) the subtype of bipolar disorder being considered; b) the person's age and stage of development; c) whether one views bipolar disorder more conservatively, requiring clear episodes that mark a distinct change from premorbid levels of function, or more liberally, focusing for instance on severe irritability/explosive outbursts as the mood change; d) who is reporting manic symptoms, and whether symptoms are past and must be recalled or current and more likely to be observed; e) impact of family history. The diagnosis of mania/bipolar I disorder may not become clear for a number of years. This is an impairing disorder, but so are the conditions from which it must be distinguished. Family history may increase the odds that certain symptoms/behaviors are manifestations of bipolar disorder but it does not make the diagnosis. Until there are biomarkers that can confirm the diagnosis, and treatments unique to the condition, it is wise to make a diagnosis of bipolar disorder in children and adolescents provisionally and keep an open mind to the likelihood that revisions may be necessary.*

**Key words:** Bipolar disorder, mania, irritability, children, adolescents

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At least five issues complicate the differential diagnosis of bipolar disorder in young people: a) the subtype of bipolar disorder being considered (i.e., the differential diagnosis of mania vs. that of depression; the differential diagnosis of bipolar I disorder vs. that of bipolar disorder not otherwise specified (NOS)); b) the child's age and stage of development; c) whether one views bipolar disorder more conservatively, requiring clear episodes that mark a distinct change from premorbid levels of function, or more liberally, focusing for instance on severe irritability/explosive outbursts as the mood change; d) who is reporting manic symptoms, and whether symptoms are past and must be recalled or current and more likely to be observed; e) the utility of family history in making a diagnosis.

Children and adolescents are not necessarily good reporters about events in time, or may not understand such abstract concepts as euphoria and racing thoughts. Parents may not be aware of or may misinterpret their child's internal state. Children spend almost half their waking life in school, so that, if a child is experiencing a prevailing mood most of the day every day, a teacher should be able to notice a behavioral change, whether or not he/she recognizes symptoms as being manic or something else (1).

This review focuses primarily on mania, and distinguishes adolescents from children. We try to address broad vs. narrow approaches to diagnosis, and we discuss the implications of informant variance for diagnosis.

## MANIA IN POST-PUBERTAL YOUTHS

Jeffrey, who was 14 when first evaluated, was described as an energetic, motivated, creative and gregarious adolescent, who involved himself in multiple activities but completed them successfully. He was conscientious and respectful, and had many interests. Over the course of a few months, however, he developed attention problems, began using the neighbors' swimming pool at 2 am without their permission, tried to call President Bush to give him advice about invading Iraq, and became testy and oppositional with parents when they tried to get him to get a decent night's sleep. Following this period, which lasted several weeks, Jeffrey became bedridden with fatigue, disinterested in friends or activities, and almost stopped eating. He felt very depressed. Further interview elicited other symptoms of mania with no past history of depression. Consultation was sought about whether this was "adolescence" or psychopathology. Complicating matters, he had sustained a head injury playing football and, although he did not lose consciousness, there was some question about whether his behavior, which began several weeks later, was related to the head trauma.

While Jeffrey appears to have experienced a fairly classic manic episode, several issues need further evaluation:

- How much do Jeffrey's behavior encompass a clear departure from his prior "hyperthymic temperament"? (2). A hyperthymic person is habitually upbeat and exuberant, articulate, jocular, overoptimistic, uninhibited, carefree, energetic and full of improvident plans, versatile with broad interests, overinvolved and even meddlesome. That certainly characterized Jeffrey. Had he crossed the boundary into a hypomanic or manic episode? The boundary would have been clearer had Jeffrey been a quiet, unassuming character prior to going into what appeared to be his overdrive, but his impairment and subsequent depression were not consistent with temperament alone.
- Was Jeffrey's head injury relevant? There are case reports noting the association between traumatic brain injury and mania (3). There is also a condition called "personality change following traumatic brain injury" (4), referring to

a disinhibited state that was called organic affective disorder in earlier DSMs.

- Is there any evidence that Jeffrey is abusing substances? New onset mood symptoms in teenagers warrant questions about drug and alcohol abuse and dependence (5). Teens abusing marijuana, alcohol, or other drugs, may develop psychosis and/or mood symptoms. While a positive toxicology screen helps document drug involvement, negative drug screens do not rule out substance abuse. Furthermore, symptoms of mania may continue for weeks after the patient is drug free. It is often difficult to disentangle whether drug abuse has precipitated a mood episode that otherwise would not have occurred, has hastened its onset, perpetuates a mood problem that might otherwise have subsided, or is irrelevant (6).

Between 11% and 27% of teens hospitalized for a first psychotic episode have a diagnosis of bipolar I disorder at least initially (7). It is often very difficult, however, to be definitive in diagnosis with the first episode, because symptoms may be confusing or may change over time.

For instance, Dennis was 16 when, over the course of 3 days, he stopped sleeping, felt he could control the world, wrote letters that everything had a purpose and was interconnected, including the German swastika, the pyramids and the peace symbol. He was physically restless and hyperverbal. He became increasingly paranoid, feeling his psychiatrist wanted to hurt him. Over the next 6 months, with treatment (antipsychotic and lithium), his affective symptoms remitted, but he developed thought broadcasting and referential thinking which never remitted. Ten years later, he was diagnosed with schizoaffective disorder because of his chronic thought disorder and unremitting psychotic symptoms. His medications appeared to attenuate his mood symptoms, but not his negative symptoms.

Although almost 70% of first episode psychotic manic subjects retained a bipolar or probable bipolar diagnosis at 10 years following their initial episode (8), predictors of worse outcome and change in diagnosis were Schneiderian symptoms at baseline, and poor premorbid functioning. Other harbingers of poor outcome were depressive phenomenology, childhood psychopathology, and younger age at first hospitalization (9).

## MANIA IN CHILDREN

Mania in children before the age of 10 is more contentious than mania in adolescents (10). In applying DSM-IV-TR bipolar disorder criteria to children, several modifications have been proposed in order to fit the symptom profile of mania to symptoms more common in younger children. Unresolved is whether these children grow up to manifest clear episodes of mania and depression like Jeffrey (acute onset of mania, discrete episodes, little comorbidity) vs. ongoing dysregulated mood with depression – similar to subjects in the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) study (11) – vs. some other outcome, including maturity with no further episodes (12).

An insidious problem with the diagnosis of early-onset bipolar disorder is different interpretation of the criteria. There is little disagreement on classic cases of mania, where onset is clear and manic symptoms co-occur that are easily distinguished from other psychopathology. In other less "classic" cases, however, there is considerably greater disagreement (13). Reliability can be achieved easily enough within groups, but that does not guarantee reliability across groups.

According to DSM-IV-TR, a manic episode is identified as a "distinct period" of specific and co-occurring symptoms. Unfortunately, "distinct period" has not been consistently operationalized (14). Thus, the criteria for mania will be undergoing some modifications in the DSM-5 (see www.dsm5.org). As noted in the rationale for these changes, "the question of what constitutes an episode has been the subject of some controversy and confusion, especially in the child psychiatry literature". In the view of the Mood Disorders Work Group, the wording of the DSM-IV criteria for mania and hypomania may have contributed to that confusion. The proposed change is therefore a clarification whose goal would be to ensure that diagnostic practices remain consistent with both the intention of previous iterations of the DSM and across the developmental spectrum. Thus, criterion A is expected to read: "a distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased activity or energy, lasting at least 1 week and *present most of the day, nearly every day* (or any duration if hospitalization is necessary)".

The conceptualization of symptoms is important to the discussion of the differential diagnosis of mania. While depressive symptoms have been recognized as being different from a depressive episode, or "clinical depression", there has been little appreciation that manic symptoms may occur outside of a manic episode. Originally highlighted in a community study in 1988 (15), a number of studies since have confirmed the fact that manic symptoms occur much more frequently than a manic episode, are significantly impairing, but cut across many conditions (16,17). Without the clarification of a distinct episode, a period with an onset and an offset that is different from one's "usual behavior", and without information in young children about what "usual behavior is", it is very difficult to distinguish mania from other childhood conditions in which irritability and agitation also occur.

Attention-deficit/hyperactivity disorder (ADHD) is the condition most often confused with mania in children (18). There is considerable symptom overlap (both conditions have notable distractibility, impulsivity, hyperactivity, rapid and overproductive speech) (19). However, children with manic symptoms have more than uncomplicated ADHD. They invariably meet criteria for other disorders (comorbidities) and are considered more impaired (20,21). Interestingly, when children with manic symptoms are matched with ADHD children with similar comorbidities, differences between them evaporate (22,23). The diagnostic question becomes whether children with manic symptoms have bipolar disorder and ADHD or whether they have ADHD with high levels of emotionality and/or oppositional defiance.

Emotionality/oppositional defiance in ADHD is noted in the DSM-III/IV text among "associated symptoms". The DSM-IV-TR text states that the emotionality component includes low frustration tolerance/irritability, temper outbursts, mood lability, dysphoria and low self-esteem. These symptoms clearly reflect a mood dimension. The emotionality component maps onto both inattentive and hyperactive dimensions of ADHD. The inattentive ADHD symptoms may be primarily associated with breakdowns in the regulation side, whereas hyperactivity-impulsive ADHD symptoms may be associated with breakdown in the emotionality side (24). What is evident is that children with either bipolar disorder or ADHD and emotionality are more clearly impaired cross-sectionally and longitudinally than children with uncomplicated ADHD (20,25).

ADHD and bipolar disorder frequently co-occur. The recently published Longitudinal Assessment of Manic Symptoms study (16) most carefully dissects the question of ADHD and bipolar disorder (20). The investigators compared 6-12 year old children whose parents endorsed manic symptoms on an instrument called the General Behavior Inventory (26) (n=621) with a lower scoring group (n=86). Of the total 707 children, the vast majority (59.5%) had ADHD without a bipolar spectrum disorder, 6.4% had a bipolar spectrum disorder without ADHD, 16.5% had both, and 17.5% had neither. Bipolar spectrum disorder was equally divided into bipolar I disorder and bipolar disorder NOS (with few having bipolar II disorder). Similar to prior studies (1,15), most children with manic symptoms did not have bipolar spectrum disorder. Of the 162 children who had bipolar spectrum disorder, most (72.2%) had co-occurring ADHD. Parent ratings revealed that this combination produced more symptoms than either condition alone. Diagnosis was made with the Schedule for Affective Disorders and Schizophrenia for Children (K-SADS-PL, 27) and, though the authors do not specify, one assumes it was based mostly on parent information, since teachers often disagreed (20). Nevertheless, considerable care was taken to distinguish chronic symptoms from acute or fluctuating ones and it is precisely that approach which is needed to help distinguish mania from ADHD from the co-occurrence of the two conditions.

Apart from taking a history which establishes that an episode has taken place, further vetting of possibly overlapping symptoms is necessary. Symptoms that lend themselves to confusion between mania and ADHD include:

- The silly, disinhibited behavior of a child with ADHD trying to be funny and not knowing when to quit vs. someone with an elated mood.
- Impulsivity vs. pleasure-seeking without heeding consequences.
- Resistance to bedtime vs. a reduced need for sleep.
- Exacerbation of subthreshold ADHD symptoms because of increased late elementary or middle school demands vs. the start of a mood disorder.
- Progression of ADHD symptoms to include more oppositional/explosive/conduct disordered behavior in the context of family, school and/or peer difficulties.
- Pragmatic, distracted or odd language seen in children who have language disorders as part of ADHD or an autism spectrum disorder vs. the flight of ideas/thought disorder of mania.
- "Hallucinations" seen in a very anxious child vs. mood incongruent symptoms of mania.

Children with autism spectrum disorders may be confused with children with mania because of their emotion regulation problems (28). Not only do these children have hyperactivity and impulsivity, but their pragmatic language difficulties can look like a thought disorder to clinicians who are not versed in the difference (29). As in the case of ADHD, however, a good history should help distinguish which symptoms are chronic and which are manifestations of a new condition. Interestingly, although autism and bipolar disorder (including more classic episodic bipolar disorder) have been often associated (30), children with known pervasive developmental disorder are almost always excluded in formal research studies.

## MOOD DYSREGULATION

Lynda, described elsewhere (13), was 11 and presented with what her parents called "mood swings", i.e. frequent explosive outbursts when she was frustrated over anything, no matter how trivial. She had a history since toddlerhood of ADHD, which never completely remitted with stimulant medication. By 5th grade, she had become very irritable, disobedient, nasty to her parents and dismissive of their concerns about her poor school performance, grandiosely feeling she needed no education. She viewed pornographic sites on the computer and stayed up late at night allegedly "on line with friends". She was behind academically and unpopular with classmates. She was not explosive in school, but ADHD symptoms were evident. Her parents endorsed manic-like symptoms during interview. Lynda herself described dysphoria, irritability, trouble concentrating, low self-esteem, and occasional suicidal ideation. In addition, there was considerable strife at home, though no actual domestic violence. Lynda's differential diagnosis using DSM-IV criteria would include ADHD and emerging oppositional defiant and possible conduct disorder, major depressive disorder, an adjustment disorder secondary to increasing failure socially, academically and at home, and an episode of mixed mania.

Mood dysregulation/lability is increasingly recognized as an important component of a number of conditions (31). The lay public, in fact, uses the term "bipolar" to characterize "mood swings", i.e., abrupt changes in mood that seem inexplicable to the observer. The reference is to a switch to a negative mood, the essence of irritability. In the throes of a manic episode, children and adults are often irritable. What has proved controversial is the question of whether children who become severely explosive have mania or whether this behavior, like irritability in general, cuts across all the conditions in which irritability is a prominent symptom (like depression, anxiety, schizophrenia, etc.) (32).

## DEPRESSIVE AND ANXIETY DISORDERS

Irritability, of course, is an important symptom not only in mania, but also in depression (both major depressive disorder and dysthymia) and anxiety disorders (including post-traumatic stress disorder, obsessive-compulsive disorder, social phobia, separation and generalized anxiety disorders). As with ADHD, the question is often not an "either or", but a "both". The distinction between mixed mania or rapid cycling and an agitated depression is especially difficult. In fact, some consider agitated depression as part of the bipolar spectrum (33). Longitudinal follow-up (34) and follow-back (35) data suggest that a predominantly depressive course in children with bipolar spectrum disorders is more chronic and treatment refractory than a predominantly manic course (9). The question in the childhood group followed prospectively will be how many either "outgrow" their manic symptoms and remain depressed (36) or even remit (12).

Irritability and hyperarousal are also symptoms of anxiety. Anxiety disorders are a common bipolar comorbidity in adults and youth. In adults, anxiety symptoms decreased the probability of recovering from a depressive episode of bipolar disorder, increased time to recovery, and increased the likelihood of relapse (37). In children, anxiety disorder usually precedes the onset of mania, in which case, a *bona fide* manic episode would be comorbid. Without a prior history of anxiety, it is quite possible that the symptoms of anxiety are part of the manic episode and not truly comorbid (38). In children and adolescents, anxiety appears more often associated with bipolar II disorder. Those with bipolar II disorder and anxiety had more concurrent depressive symptoms, longer and more severe depressive episodes, and a greater family history of depression than those without comorbid anxiety (38).

## DISRUPTIVE MOOD DYSREGULATION DISORDER

In an effort to better understand the similarities and differences between chronic, severe irritability and more classic, episodic bipolar disorder, Leibenluft and the National Institute of Mental Health (NIMH) Intramural Program on Mood Disorders have defined a condition called "severe mood dysregulation (SMD)" (32). This is characterized by chronic irritability with frequent explosive outbursts not better diagnosed as mania, schizophrenia or schizophrenia spectrum disorder, pervasive developmental disorder, post-traumatic stress disorder, substance abuse, a medical or neurological condition. In a sample of 146 children, 75% in fact had comorbid ADHD and oppositional defiant disorder, and over half (58%) had at least a lifetime anxiety disorder. Although no actual follow-up studies of children with SMD have been done, extrapolated data (39-41) suggest that depression underlies these behaviors. It appears that the DSM-5 Mood Disorders Work Group will use the data gathered from this sample to add a condition to the manual as a mood disorder, and the condition will be called disruptive mood dysregulation disorder (DMDD) (see www.dsm5.org).

DMDD should be readily distinguished from mania because of the absence of episodes. In addition, the condition is defined as starting after age 6 (to keep tempestuous toddlers and preschoolers from being given the diagnosis) and before age 10 (to indicate it is a childhood disorder). It is chronic (i.e. symptoms have lasted for at least a year) to hopefully keep children who are responding to acute stressors, and who could be classified as having an adjustment disorder with disturbance of conduct or mood, from getting the DMDD diagnosis. DMDD, if the diagnosis is appropriately used, is severe and disabling (31).

DMDD's biggest diagnostic problem will be that irritability and explosive outbursts occur with many known conditions (42). Children who present with rage outbursts (regardless of whether or not they have chronic irritability) find their way into emergency rooms, psychiatric and residential facilities and special education. They require a useful diagnosis that will allow quantification, suggest a treatment alternative and allow for insurance reimbursement. The usual diagnostic home for children with rage outbursts has been oppositional defiant and conduct disorder, neither of which are considered reimbursable because they are regarded as "parenting" or "social" problems. The absence of a valid and useful way of codifying rage outbursts has led to a misuse of the bipolar disorder diagnosis and has prevented us from understanding the seriousness of these outbursts (43).

There is a question of whether rage outbursts represent a difference of degree or kind from the tantrums of younger children (44,45). Interestingly, their structure is similar, but the duration is longer (at least 20 minutes rather than 5 minutes), and what the child does during the tantrum is worse (kicking, hitting, throwing, spitting) in part because a child or adolescent of 7-17 is bigger and can inflict more damage than a seriously disturbed toddler. There are no data to suggest these outbursts change with diagnosis (i.e., rage outbursts that occur during a panic attack look similar to those that occur during a manic episode, oppositional defiant disorder, depression, etc.) (46). Many clinicians are appropriately concerned that this "diagnosis" will be as misused as "bipolar disorder" (43). This could be avoided if the diagnostic rules are followed, and if "explosive outbursts" were to be used as a modifier to any condition in which they occur, much as catatonia is being proposed to modify a variety of disorders. For instance, a diagnosis of ADHD with explosive outbursts as a modifier would allow the basic condition to be identified as well as the outbursts which are what is leading to the higher level of treatment.

## INFORMANT VARIANCE

At a minimum, diagnosis in child and adolescent psychiatry requires interviewing the parent/caregiver and the child/adolescent. In the case of behavior disorders, like ADHD, teacher information is important. Unfortunately, agreement between informants is modest at best and kappa agreement between parent and child on mania and depression symptoms has been generally less than 0.2 when it was reported. Nevertheless, Biederman et al (47) found that both parent and child endorsed manic symptoms in 62.7% of cases diagnosed with mania, and Tillman et al (48) found that 49.5% of their sample agreed on manic symptoms.

However, Tillman's study reported that rates of agreement were highest for ADHD type symptoms (80% for rapid speech, 91.4% for increased energy, 85.9% for motor hyperactivity), 75.8% for irritable mood, and considerably lower for other manic symptoms (42.2% for elevated mood, 32.5% for grandiosity, 35.8% for flight of ideas, 34.4% for disinhibited behavior, 16.2% for decreased need for sleep, and 21.4% for psychosis). Furthermore, for the mania specific symptoms, child endorsements were much lower than parent endorsements. It is easy to see why there might be disagreement about whether children so diagnosed have mania vs. ADHD, since drawing conclusions about a child's internal state rests solely on parent interpretation.

Corroboration of a child's manic behavior by sources other than parents has not been a major thrust of research in bipolar disorder. Correlations between parents and teachers, where they have been obtained, are around r= 0.3 (49). Carlson and Blader (1) reported that, where parents and teachers agreed about high rates of manic symptoms (as obtained from the Child Mania Rating Scale (CMRS, 50)), logistic regression indicated 10-fold greater odds of children being diagnosed with externalizing disorders (ADHD, oppositional defiant disorder, conduct disorder, or any combination of these). Children with bipolar spectrum disorder were also more likely to have concordant parent/teacher ratings. By contrast, children with internalizing disorders (anxiety and depressive disorders) were 3.7 times more likely to have discordant parent and teacher CMRS ratings. In this study, however, diagnosis was made with a best estimate procedure using parent, child, teacher and testing information rather than only a semi-structured interview. Further information is needed to explain why a condition that is severe, and lasts days to weeks, is observed by parents and not teachers.

## FAMILY HISTORY

Bipolar disorder clearly has a genetic component (51). An old meta-analysis (52) reported that bipolar offspring are at 2.7 times higher risk to develop a psychiatric disorder and 4 times higher risk to develop a mood disorder compared to offspring of healthy parents. Recent studies report similar findings (53). Interestingly, however, rates of general psychopathology are much higher than rates of bipolar I disorder. Hillegers et al (54), for instance, found that, by age 21, 3% of a Dutch high-risk sample had bipolar I disorder, 10% had bipolar spectrum disorder, but 59% had psychopathology in general. Although high-risk children with mood symptoms are at higher risk than those without to develop bipolar disorder as adults, they are also at higher risk to develop a host of other conditions (55).

Many high risk studies compare bipolar parents' offspring with those of non-psychiatric controls, which underscores differences in risk. However, children who present clinically often have families with all sorts of other disorders such as ADHD, autism, learning disabilities, other mood disorders, and schizophrenia. There is some suggestion that offspring of lithium responding parents have a less complicated course than those of non-lithium responding parents (56), which might help with treatment decisions if the diagnosis of bipolar I disorder is made. However, the presence of the parental condition does not make a diagnosis in the child.

Finally, the age of risk for bipolar disorder is a long one. A population-based Danish sample confined to studying offspring of parents hospitalized with bipolar disorder found that rates through age 53 for the offspring of one parent with bipolar disorder was 4.4% compared to 0.48% with no parent with bipolar disorder. The rate before age 20 was negligible (57).

The conclusion to be drawn from this information is that, although family history can raise the index of suspicion about bipolar disorder, it cannot make a diagnosis, especially if the other diagnostic components of the condition in the child are absent.

## CONCLUSIONS

Although mania/bipolar I disorder often has its onset in youth, the diagnosis may not become clear for a number of years. It is a complex and disabling condition, but so are the conditions from which it must be distinguished. Psychosis, substance abuse and agitated unipolar depression pose the greatest problems in differential diagnosis in teens. Disorders of executive function do so in children. Multiple informants increase diagnostic accuracy, though one must sort out differences in informant reports across parent, child and teacher. Positive family history may increase the odds that certain symptoms/behaviors are manifestations of bipolar disorder, but it does not make the diagnosis. Furthermore, complex children often come from complex families.

Until there are biomarkers that can confirm the diagnosis, and treatments unique to the condition, it is wise to make a diagnosis of bipolar disorder in children provisionally and keep an open mind to the likelihood that revisions may be necessary (58). Stating that a child unequivocally has a lifetime disorder requires more evidence than we have.

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# Investigating schizophrenia in a "dish": possibilities, potential and limitations

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Psychiatric disorders such as schizophrenia are the most human of conditions, and the idea that they could be studied in a cell culture dish might appear counterintuitive. But advances in genetics and stem cell biology are placing *in vitro* approaches centre stage in furthering our biological understanding of these illnesses.

Genome-wide association studies and screens for rare genetic variants are now implicating a host of novel genes in susceptibility to schizophrenia and bipolar disorder. Concurrently, advances in stem cell biology are providing human nerve cells in a dish, allowing molecular, developmental and pathophysiological events to be studied with considerable veracity.

Here, we examine current human cell culture technologies and ask how far they might go in advancing our understanding and treatment of schizophrenia and other psychiatric disorders.

## IMMORTALIZED HUMAN NEURAL CELL LINES

Certain neural populations can be directly obtained from living human subjects and grown as "primary" cultures. However, ethical and practical considerations generally limit the use of primary human brain tissue as a source of neural cells for research. Neural cell lines that have been immortalized through loss of tumour suppressor genes or oncogene induction provide a standardized and potentially limitless alternative.

The principal uses of such cell lines for psychiatric research are as models to explore the intracellular mechanisms of drug action and to investigate the molecular and cellular functions of identified susceptibility genes. This work may lead not only to refinements in current drug treatments, but also to the identification of novel therapeutic targets.

### Tumour-derived neural cell lines

Researchers have for many years used human malignancies as a source of cell lines that will readily expand in culture, and several established tumour-derived lines have neural characteristics. Currently, the most commonly used human neural cell line is the SH-SY5Y line, which was originally derived from a metastatic neuroblastoma. This line displays neuronal properties, including neurite outgrowth, neurotransmitter synthesis and receptor expression.

The SH-SY5Y line has been widely used to study intracellular mechanisms of antidepressant and antipsychotic drug action (e.g., 1). Because they endogenously express neural proteins, SH-SY5Y cells are also of utility for investigating the mechanisms of susceptibility genes and the functionality of DNA sequence variants showing association with psychiatric disorders. For example, extracts from these cells have recently been used to demonstrate that the first DNA variant showing "genome-wide significant" association with psychosis alters the binding of a transcription factor which regulates expression of the ZNF804A gene (2).

### Immortalized neural stem cell lines

Although they can have neural characteristics, tumour-derived cell lines are limited in the cell types that they can be made to resemble, and usually have major chromosomal abnormalities. Stem cells derived from human fetal brain are multipotent (i.e., they can give rise to a range of neurons and glia) and allow developmental and physiological processes to be studied more faithfully. Clonal neural stem cell lines can be generated by conditional immortalization, whereby a regulated gene that drives cell division is introduced into the cell's genome, allowing controlled expansion and differentiation (3).

Neural stem cell lines with normal chromosomes have been thus established from several human fetal brain regions, including cerebral cortex, hippocampus and striatum. Like tumour-derived cell lines, clonal stem cell lines provide a model system by which to explore the mechanisms of drug treatment and identified susceptibility genes for psychiatric disorders. For example, the hormone cortisol is thought to mediate the negative effect of stress on hippocampal neurogenesis. This has been modelled in a human hippocampal stem cell line, from which an understanding has emerged of how antidepressants counter this effect and restore neurogenic activity (4). Similar cells from human cerebral cortex have been used to model pathogenic changes in the expression of the disrupted-in-schizophrenia-1 (DISC1) gene (5) and to provide the first data on the molecular functions of the schizophrenia/bipolar disorder susceptibility gene ZNF804A (6).

## PATIENT-DERIVED NEURAL CELLS

Another approach is to derive and compare neural cells from patient and control subject cohorts. The use of cells from patients permits investigation of pathological processes arising from the combined action of all the genetic susceptibility variants harboured by each individual. These living cell cultures may illuminate processes that are not apparent from case-control comparisons of brain tissue *post-mortem*; in particular, developmental processes which might be particularly relevant to schizophrenia aetiology.

### Cells derived from olfactory neuroepithelium

The olfactory mucosa is a source of accessible adult stem cells that can be harvested through biopsy. These cells can be propagated in culture as neurospheres; that is, as aggregate cultures of neural stem cells and differentiating neural progenitor cells. Cells thus derived have been found to exhibit gene expression differences between schizophrenia patients and controls that implicate neurodevelopmental processes such as axon guidance (7). Cells derived from the olfactory neuroepithelium of schizophrenia patients have also been reported to show alterations in cell cycle dynamics compared with control individuals (8).

### Induced pluripotent stem cells

While olfactory neural precursors from patients carry all of the genetic variants that have predisposed them to their illness, they do not provide a perfect model of the regional cell types that are considered to be central to psychiatric disorders, such as those of the cortex or hippocampus. Induced pluripotent stem (iPS) cell technology provides a major advance in this direction.

Imagine you could identify a prospective schizophrenia patient *in utero*, twenty years before the onset of the illness, and take a brain biopsy. You could then culture the patient's own cells, and follow their development as the pathological processes played out. Remarkably, iPS technology, reported in a seminal paper in 2006 (9), permits a close approximation of this. Primary somatic cells – typically from skin – can be taken from a patient and "reprogrammed" into pluripotent stem cells that can give rise to all of the cell types that make up the body, including those of the central nervous system.

Reports are now beginning to emerge in which this technology has been applied to cells taken from psychiatric patients. For example, Brennand et al (10) took skin fibroblasts from schizophrenia patients and healthy controls, reprogrammed them, and then grew neurons from these pluripotent cells. Compared with control cells, neurons derived from patients showed altered expression of genes involved in glutamate, cyclic adenosine monophosphate (cAMP) and wingless-type MMTV integration site family (WNT) signalling, as well as reduced neurite number and synaptic connectivity.

By capturing a patient's entire genome and normal development probably as accurately as possible in a two dimensional culture, iPSCs constitute an unparalleled material for studying neurodevelopmental features of psychiatric disorders *in vitro*. Most recently, it has also proven possible to reprogramme human fibroblasts directly into neuronal ("induced neuronal" or "iN") cells (11), providing a more convenient source of models of individual patient neurons with which to investigate mature cellular pathophysiology and drug treatment response.

However, both of these technologies are very much in their infancy; studies to date have been based on very few samples and future work will be challenged by the variability inherent in the neural cultures themselves, as well as between cell types and subjects (12). Standardized protocols for scaling up these experiments will therefore be necessary for these technologies to reach their full potential.

## LIMITATIONS OF CELL MODELS

All cell models have their shortcomings. Although generic human neural cell lines can be used to investigate the molecular and cellular functions of individual susceptibility genes, they do not capture the many, likely interacting, genetic variables that contribute to the development of complex psychiatric disorders. Patient-derived cell lines offer the advantage of capturing each individual's whole genome, but we currently have limited knowledge of which cell types are most relevant to these illnesses and therefore which ones to study.

Analyses of multiple cell types from each patient, when compared with those from control individuals, might indicate cell populations that are generally affected in a given condition, but this will be at considerable expense. In addition, while iPS/iN technology controls environmental variables that can confound investigation of pathogenic mechanisms (e.g., effects of medication), it also loses the effects of environmental factors that contribute to psychiatric illness.

More generally, psychiatric disorders such as schizophrenia are an emergent property of the human brain as a whole, in the context of the individual within society. Although cell models can help elucidate the molecular and cellular basis of these disorders, they therefore have to be considered as only one level of enquiry.

## CONCLUSIONS

Cell-based approaches to psychiatric disorders are advancing on two fronts. On one, clonal lines which accurately model cells of the central nervous system are being used in tightly controlled experiments assessing the mechanisms of drug action and identified susceptibility genes for psychiatric disorders, which might in the short term provide the fastest route to improved treatments for these conditions. On the other, cells derived from patient and control populations are allowing pathological processes arising from the combined action of multiple genetic susceptibility variants to be assessed in "real-time". Although protocols for scaling up induced neural cells are still in development, the combination of accessibility and face validity guarantee their adoption by both academics and drug companies.

While cell models can never capture all of the complexity of psychiatric illness, the derivation and study of defined neural cell types from large patient cohorts may in the not too distant future provide considerable insights into the biology of these disorders, as well as models with which to develop and test novel therapeutics.

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# Issues and developments on the consumer recovery construct

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*The consumer recovery model has had increasing influence on mental health practices in the United States, Western Europe, and several other countries. However, adoption of the model has reflected political decisions rather than empirical evidence of the validity of the model or its value for treatment services. The recovery construct is poorly defined, and until recently there has been no reliable and valid measure with which to base a research program. We have developed an empirical measure that is well-suited for both research and clinical applications: the Maryland Assessment of Recovery in Serious Mental Illness (MARS). We briefly describe the MARS and present preliminary data demonstrating that recovery is not a simple by-product of traditional outcome domains, but seems to be a distinct construct that may have important implications for understanding consumers with serious mental illness and for evaluating the outcome of treatment programs.*

**Key words:** Recovery, serious mental illness, consumer movement, self-efficacy, social learning model

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Schizophrenia and most other forms of serious mental illness have traditionally been viewed as chronic conditions with poor outcomes. This pessimistic view has begun to change, as a series of long-term outcome studies have demonstrated that the course is more variable both across and within individuals, and that many people meeting strict diagnostic criteria have very good outcomes, often without maintenance medication (e.g., 1-4). There are now upwards of 20 contemporary studies of the long-term outcome of schizophrenia. These studies vary in specific criteria, measures, samples, and time frame, but overall some 50% of people with careful research diagnoses appear to have a good outcome, with substantial reduction of symptoms, and good quality of life and role function over extended periods of time.

At the same time as these new outcome data have been collected, there is growing recognition that traditional paternalistic mental health services have generated feelings of hopelessness and helplessness among many consumers, promoting dependence, and fostering stigma. In response to the failure of traditional services, consumers and many professionals have promoted a *recovery movement*, based on a model of recovery and health care that emphasizes hope, respect, and consumer control of their lives and mental health services (5).

Two important reports from the US federal government provided momentum to the recovery movement. First, the Surgeon General's Report on Mental Health (6) concluded that all mental health care should be consumer and family oriented and have the promotion of recovery as its primary aim. This position was echoed more forcefully in the President's New Freedom Commission report *Achieving the promise: Transforming mental health care in America* (7). Among other things, the report stated: "…care must focus on increasing consumers' ability to successfully cope with life's challenges, on facilitating recovery, and on building resilience, not just on managing symptoms". The principles enunciated in these reports have been adopted by several state mental health systems in the United States, along with Canada, the United Kingdom, Italy, Australia, and New Zealand.

## CONSUMER-ORIENTED DEFINITIONS OF RECOVERY

The consumer movement and the associated policy changes are based on the contention that recovery is a *process* that occurs over time in a non-linear fashion (8). Anthony (9) described it as "a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness". More recently, in a report on the New Freedom Commission, Hogan (10) described recovery as "a process of positive adaptation to illness and disability, linked strongly to self-awareness and a sense of empowerment". The key elements of these definitions (recovery as a process in which the individual strives to overcome the fact of mental illness and its impact on one's sense of self) have been echoed in many other definitions (11).

In 2004, the US Substance Abuse, Mental Health Services Administration (SAMHSA) held a 2-day consensus conference with over 100 consumers, mental health professionals and scientists, and developed the following definition of recovery: "Mental health recovery is a journey of healing and transformation for a person with a mental health disability to be able to live a meaningful life in communities of his or her choice while striving to achieve full human potential or personhood". Ten characteristics of recovery and recovery-oriented services were also identified by SAMHSA: self-direction, individualized and person-centered, empowerment, holistic, non-linear, strengths-based, peer support, respect, responsibility, and hope. The SAMHSA definition is widely accepted by the field. It has been adopted by the Veterans Health Administration and several state mental health systems, and will guide future SAMHSA funding programs.

The SAMHSA definition and dimensions are each elaborated in an accompanying document, but they do not provide an operational definition of recovery. Rather, they comprise diverse dimensions of the *recovery model*, including: person characteristics (e.g., self-direction, empowerment, respect (for self), responsibility, hope), systems characteristics (e.g., individualized and person-centered, strengths-based, peer support, respect (from others)), and descriptors or parameters of recovery (e.g., holistic, non-linear).

As SAMHSA is the federal agency charged with developing and implementing national health policies, this conceptualization will likely have important implications for clinical practice and reimbursement in the United States. However, the recovery components specified by SAMSHA are not well-defined and there are marked redundancies across the items (e.g., empowerment and self-determination). Some of the elements refer to individual characteristics (e.g., hope, respect), while others refer to characteristics of the person's environment or clinical service the person receives (e.g., the value of peer support). Overall, the elements are not adequate criteria for research, or for evaluating the effectiveness of clinical programs. They also do not provide adequate guidance about how to evaluate a person's recovery status or changes over time, or to determine what other environmental or clinical factors are associated with recovery.

## LIMITATIONS OF THE CONSUMER MODEL OF RECOVERY

No systematic data are available on rates of recovery as defined from the consumer perspective. Anecdotal data and commentaries by the many impressive consumer spokespersons for the recovery model are informative, but it is difficult to extrapolate from these sources of information. It is clear that the professional and scientific communities have not sufficiently appreciated the subjective experiences of people with severe mental illness, and their ability to recover from the debilitating effects of their illness. Conversely, it is not clear if the experiences of consumer-professionals are characteristic of the broader population of people with severe mental illness or if they represent a distinct good outcome subgroup.

The consumer recovery model has been referred to by some mental health professionals as "old wine in new bottles" and a "feel good" conceptualization that does not have true practical implications (12,13). If the concept is to have lasting impact, it is essential that it be tied to more objective measures of course of illness and community functioning that are viewed as relevant by scientists, clinicians, family members, and legislators. Studies are required to understand factors that contribute to consumer-defined recovery and determine its course. For example, consumer definitions generally suggest that recovery is independent of symptoms, but the few studies that have examined this issue report that recovery and symptoms are negatively correlated (14,15).

## A social cognitive model of recovery

A major limitation of the consumer model of recovery is that is it not grounded in established psychological principles, and refers to vague constructs that have not been objectively defined (16). We conceptualize recovery in the context of Bandura's social cognitive theory of *human agency* (17,18). Bandura postulated that people are agents of their experience and not simply passive respondents to a deterministic environment, or automatons who are driven by neurocognitive processes. The primary engine through which agency operates is *self-efficacy*. This is a set of beliefs about one's capacity to manage internal and external experiences. It includes both generalized confidence in one's abilities, and situationally specific efficacy beliefs. It also involves both *personal agency* (what people can do on their own) and *interpersonal agency* (ability to marshal help from others) (19).

Self-efficacy is determined by success/failure experiences, modeling (i.e., social learning), and the reactions of others over time. It has a powerful influence on motivation and goal setting, life choices, and action. The more people are confident in their ability to succeed or cope effectively, the more willing they are to set ambitious goals and take action. Self-efficacy also influences affect states. High self-efficacy can lead to mastery experiences, self-esteem, and life satisfaction, while low self-efficacy can lead to anticipatory anxiety, a sense of failure (regardless of actual performance), helplessness, and depression.

Figure 1 provides a graphic representation of the model. Negative experiences and attitudes (on the left) diminish self-efficacy, which leads to decrements in parameters of recovery, while positive experiences and attitudes (on the right) enhance self-efficacy and foster recovery. People with severe mental illness often have histories of personal failure in a host of social role experiences, experience harmful stigma (from the public, media, mental health professionals, and sometimes significant others), and often develop self-stigma (20). These experiences can erode self-efficacy for coping with their illness or dealing with a broad range of life demands. Diminished self-efficacy can lead to hopelessness, lack of self-respect, and lack of feelings of control (self-direction) or empowerment, which has been shown to happen in people with severe mental illness (21). Conversely, vocational success, effective shared decision making in health care, and other mastery experiences can produce increased self-efficacy and enhance feelings of empowerment, hope, self-respect, and capacity for self-direction.

Recovery from severe mental illness entails developing enhanced efficacy beliefs for key social roles (e.g., student/worker, spouse/parent), and developing a sense of control over one's illness

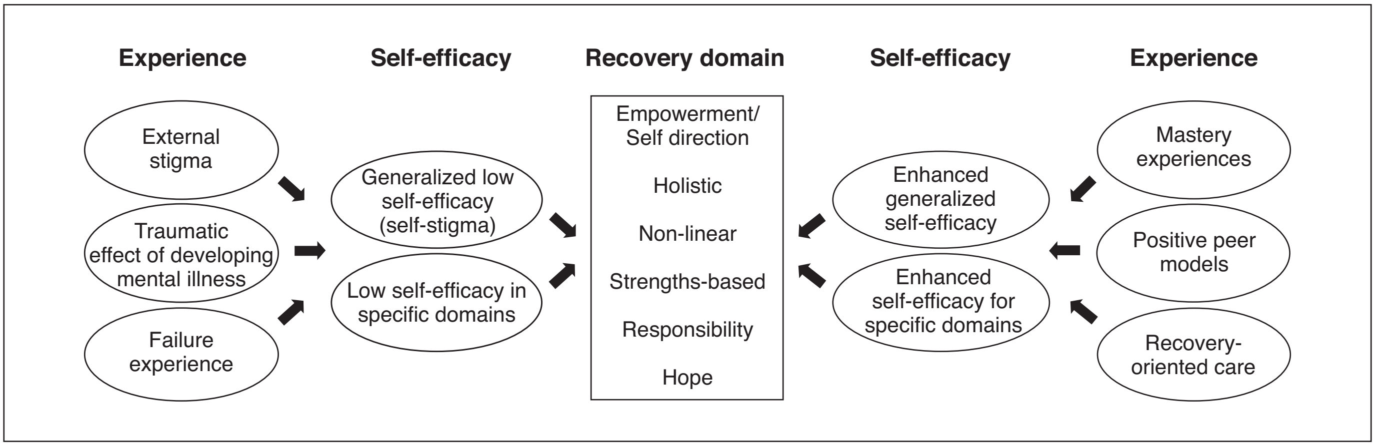

**Figure 1** A model of the relationship between self-efficacy and recovery

through both personal agency (e.g., the ability to manage one's illness and its treatment) and interpersonal agency (e.g., ability to work collaboratively with health care providers and access support from peers and family members when needed). The contention that recovery entails adaptation to illness and disability (10) is consistent with the social learning view that efficacy beliefs are specific to situations and that a person can feel efficacious in some domains despite having difficulty in others.

The empirical literature on self-efficacy and agency in severe mental illness is limited, although the concepts have been widely linked (22-24) and several studies support the relationship between efficacy and outcomes in severe mental illness samples. Personal efficacy has been shown to be related to quality of life and community functioning, including employment, in several studies (23,25,26). Efficacy was found to have a strong negative relationship with perceived discrimination and self-stigma, and a strong positive relationship with empowerment in an outpatient schizophrenia cohort (27), and it was inversely related to depression and perceived loss of independence in a schizophrenia spectrum sample (28). While not directly measuring self-efficacy, Grant and Beck (29) examined the related construct of *defeatist beliefs*: overgeneralized conclusions about one's ability to perform tasks (e.g., "If you cannot do something well, there is little point in doing it at all"). They found that these negative attitudes mediated the relationship between cognitive impairment and both negative symptoms and social and vocational functioning in a sample of people with schizophrenia and schizoaffective disorder.

## Mediators and moderators of recovery

Another limitation of the current literature on the consumer model is that it is not clear to what extent recovery is mediated or moderated by functional outcome domains, such as work and social relationships: i.e., is productive activity like work or school a mediator of recovery, a consequence of recovery, or orthogonal to it? Does progress along the path toward recovery enable improved social relationships, do improved relationships contribute to recovery, or is movement along both dimensions somehow intertwined? We believe it is essential to develop a scientific base for the consumer model and to document that recovery has important practical and conceptual implications that extend beyond the subjective well-being of consumers.

Consistent with Bandura's contention that people both influence and are influenced by their experience, we hypothesize that agency and self-efficacy are mediators between life experiences and recovery. Adverse experiences may diminish efficacy, and prevent or retard recovery, while positive experiences would have the opposite effect. There is also a feedback loop in which enhanced efficacy and progress along the path of recovery motivates and empowers the person to make positive life changes. For example, improved housing may increase hope and self-respect (30), which may increase the person's inclination to seek employment. Conversely, an increased sense of hope and empowerment may enable the person to seek better housing.

Recovery may also be influenced by moderators. Recovery-oriented treatment can exert a positive influence, and paternalistic care can have a negative effect. Some domains, such as substance use, psychiatric symptoms and cognitive impairment, may function as (negative) moderators only when they are at significant levels.

## Assessing recovery

Yet another limitation of the recovery construct is that there are no measures of recovery as defined by SAMHSA and only a handful that are based on other definitions (16). Andersen et al (31) identified only one recovery measure in a search of the published literature. Campbell-Orde et al (32) surveyed consumer and government organizations as well as the literature and identified eight measures, of which only six actually focus on recovery *per se*.

Results of these surveys reflect the fact that, for the most part, extant recovery instruments have been developed *ad hoc* by consumer groups and have not been published. They have evolved from small work group or consensus conferences with primary attention to face and consensual validity rather than a systematic psychometric program of scale development. Most are based on unsupported models or definitions of recovery. Most instruments have problems in scaling, and/or have inadequate floor or ceiling. Some are too long to be practical, and others are too heterogeneous to be useful as overall outcome variables.

In response to this situation we have developed a new measure based on our operationalized version of the SAMHSA recovery domains: the *Maryland Assessment of Recovery in People with Serious Mental Illness* (MARS) (33). The MARS is a 25-item self-report instrument designed to assess recovery status in people with serious mental illness. It was developed using an iterative process by a team of six doctoral level clinical scientists with expertise in serious mental illness and recovery in a series of ten face-to-face meetings, supplemented by structured interviews with six independent experts and a panel of consumers.

The MARS takes less than 10 minutes to complete and its items are written at a 4th grade reading level, making it practical for use in both research and for service delivery agencies. It should also be easy to translate to multiple languages. Notably, despite being developed to reflect the diverse SAMHSA recovery domains, a single primary factor accounts for the majority of variance.

We are currently conducting a longitudinal study to evaluate our social learning model and examine mediators and moderators of recovery. With a sample of more than 100 outpatients recruited to date, the data provide considerable support for our model. Table 1 provides a summary of a step-wise regression analysis of a range of domains on the MARS. Self-efficacy and human agency account for the largest proportion of variance in MARS scores: 59%. Other recovery constructs, including hope and empowerment, also account for a significant proportion of variance, but do not add appreciably to self-efficacy and agency. Positive and negative symptoms, neurocognitive functioning, social support, subjective quality of life, and health status, or receipt of recovery oriented treatment also add modest amounts of variance.

These data suggest that recovery is not a simple by-product of traditional outcome domains, such as symptoms, and is not a proxy for quality of life. Rather, it seems to be a distinct construct that may have important implications for understanding consumers with serious mental illness and for evaluating the outcomes of treatment programs. However, it should also be noted that the MARS was not highly correlated with either the receipt of recovery oriented treatment or with satisfaction with treatment. Thus, we have much to learn about what types of treatment services will enhance recovery and how to assess the extent to which services meet consumer's recovery needs.

**Table 1** Hierarchical regression of outcome domains on the Maryland Assessment of Recovery in People with Serious Mental Illness (MARS)

| | Overall ANOVA | | | Change statistics | | |
|---|---|---|---|---|---|---|
| Step | F (df) | p< | $R^2$ | Change in $R^2$ | F (df) | p< |
| 1 | 48.92 (3,102) | 0.000 | 0.590 | | | |
| 2 | 44.36 (6,96) | 0.000 | 0.735 | 0.145 | 8.474 (6,93) | 0.0001 |
| 3 | 24.24 (11,90) | 0.000 | 0.748 | 0.013 | 0.385 (11,84) | 0.0958 |
| 4 | 14.60 (16,80) | 0.000 | 0.745 | -0.003 | 0.047 (16,69) | 0.999 |
| 5 | 12.76 (18,78) | 0.000 | 0.747 | 0.002 | 0.022 (18,62) | 0.999 |

1 - self-efficacy and human agency; 2 - hope, empowerment, and self-stigma; 3 - positive and negative symptoms and neurocognition; 4 - social support, subjective quality of life, and self-rated physical and mental health; 5 - receipt of recovery oriented treatment and satisfaction with services

As indicated above, these data are preliminary and should be interpreted with caution. In addition, subjects were all receiving services at Veterans Administration hospitals in the United States. We are currently recruiting a larger and more diverse sample and will be assessing consumers 1 year after the baseline assessment. This will give us a picture of the influence of the diverse outcome and environmental factors on recovery over time, as well as how recovery status influences psychosocial functioning.

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# Recovery from schizophrenia: form follows functioning

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The ascendance of the consumer movement's definition of recovery has brought more heat than light to the growing awareness that persons with schizophrenia and other mental disabilities can be encouraged to set their own personal goals and educated to participate in an informed manner in decision-making regarding their treatment. Recovery, as defined by consumer advocates, is equated with: a) having a personally meaningful and satisfying life; b) being empowered to make one's own decisions regarding life goals and treatment; c) having hope for the future; d) being at peace with oneself and one's God; e) having a valued sense of integrity, well-being and self-respect.

While these indicators of recovery are cogent homilies, I gainsay a sole reliance on these ambiguous and subjective attitudes for defining recovery. Adhering to these sensibilities alone would destroy the boundaries between those persons who are dependent upon others and remain disabled with persisting positive and negative symptoms vs. those who have achieved relatively normal work and social functioning with lifestyles of active participation as citizens of their communities. Just as in other medical diseases (1-4), recovery from schizophrenia should be recognized only when patients, usually through effective treatment and rehabilitation, no longer have symptoms so severe that they intrude on personal independence and, as a result, can retrieve a reasonable degree of normal functioning in their families, social lives, work, school, illness self-management, independent living and recreational activities. In other words, the form of recovery follows functioning (5).

Through a series of focus groups of stakeholders in the mental health field (patients, psychiatrists and other mental health professionals, family members, active members of the National Alliance on Mental Illness and laypersons in the general population), a brace of functional criteria was developed to operationally embrace the concept of recovery (6). These included: a) symptoms low enough in severity and frequency so as not to impede everyday functioning; b) work in a competitive, market job or attending a normal school at least half time; c) reasonably cordial family relationships, recognizing that occasional family discord is normal; d) social relationships with at least one friend with whom one engages in social and recreational activities in normative community environments at least once every two weeks; e) independent living as defined by money management, illness management, self-care, personal hygiene within normal standards.

In several studies, this definition of recovery was shown to significantly differentiate individuals with schizophrenia who had or had not achieved a functional lifestyle (7-9) and normal neurocognitive functions (10).

In their incisive article, Bellack and Drapalski highlight the obfuscating and political nature of consumer views on recovery that are vague, not based on established psychological principles and refractory to an empirically reliable and valid definition. In an attempt to clothe these solipsistic definitions of recovery in objective, measurable ways and integrate them with academically respectable theories of behavior, the authors fixate on a social-cognitive model of recovery that is based on Bandura's concept of self-agency and self-efficacy.

While their attempt to articulate and validate those consumer views of recovery with an established psychological principle is noteworthy, it has the inadvertent effect of providing professional and scientific respectability to what remain subjective indicators that are not grounded in social norms. As Bandura (11) points out, "In efforts to serve all purposes, items in self-efficacy scales are usually cast in general terms divorced from specific situational demands and circumstances. This leaves much ambiguity about exactly what is being measured or the level of task and situation demands that must be managed. Scales of self-efficacy must be tailored to the particular domain of functioning that is the object of interest."

While Bellack and Drapalski identify self-efficacy as a mediator between attainment of functional goals and consumer notions of empowerment, hope and self-responsibility, it is not clear what additional explanatory power is provided by self-efficacy measures over and above functional attainment of social, family, work, school, friendship, dating, illness self-management and independent living domains. Furthermore, recent research has shown that there is a disconnect between the ability of persons to accurately forecast how they will feel in the future and how they actually do feel in future situations, thereby limiting the predictive validity of self-efficacy as a mediator for hope and personal satisfaction (12). In addition, items on most self-efficacy scales and the consumer domains of recovery encapsulated by the Maryland Assessment of Recovery in People with Serious Mental Illness (MARS) appear to be isomorphic, which would account for their statistical findings.

While individuals with schizophrenia often gain confidence and optimism as they overcome obstacles to independence and social and employment success, a self-generating system of success breeding ever more motivation to strive for success in tackling ever more ambitious goals and action is a romantic conceptualization. On the contrary, for those of us working daily with persons having schizophrenia, each functional accomplishment – living independently, starting a job, returning to school, going on a date – is accompanied by stress, lack of confidence, fear of failure and rejection. All too often, as has been noted in a plethora of studies on supported employment (13) and other rehabilitation services, success is not cumulative, but rather pockmarked by failures and the need for ongoing supports with training and re-training in functional skills and problem-solving required for normative integration into community life.

While there are obvious interactions between subjective attitudes of consumers and functional criteria of recovery, "it would be untenable to ignore the continued presence of psychotic symptoms or functional disability and inability of the person to resume expected social roles" (14).

If recovery from schizophrenia and other disabling mental disorders is to contribute to the reduction of stigma toward the mentally ill and impetus to the adoption of person-centered, recovery-oriented and evidence-based practices by mental health service systems, recovery criteria must be able to differentiate individuals who are disabled from those whose symptom and neurocognitive impairments do not interfere with illness self-management, normal psychosocial functioning and non-deviant integration and active participation in community life.

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# Recovery research: the empirical evidence from England

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Bellack and Drapalski provide an expert overview of the implications of the "consumer recovery model", giving a primarily USA-based perspective on challenges of definition, assessment and treatment outcomes. These important topics have also been addressed in England, and in this commentary some recent findings are outlined.

In relation to definition, scientific enquiry has moved beyond consensus statements. A systematic review identified all published English-language descriptions and models of recovery (1). Narrative synthesis was then used to develop a conceptual framework consisting of: a) thirteen common characteristics of the recovery journey; b) five recovery processes, comprising connectedness, hope and optimism about the future, identity, meaning in life, and empowerment (giving the acronym CHIME); and c) recovery stage descriptions.

The CHIME framework is applicable internationally (2), and an evidence base for supporting recovery requires interventions whose primary outcomes are the identified CHIME recovery processes. The existing evidence base has a different focus, reflecting traditional clinical priorities of symptomatology and functioning, so for example well-evaluated interventions targeting connectedness ("community integration" in the USA, "social inclusion" in the UK and Australia) are largely absent from the research base and hence from clinical guidelines.

Bellack and Drapalski note the problematic inclusion in the consensus statements of items at different levels: individual, environment, treatment, etc. Two systematic reviews of recovery measures have been published (3,4), which also identify the twin problems of inconsistent definitions of recovery and assessment spanning different levels. Therefore the CHIME framework has been used as a foundation for a new measure of recovery support from services. The measure – called INSPIRE (described at researchintorecovery.com/inspire) – addresses the challenge that service users vary in the importance they attach to different types of support, and so is a utility measure intended for use both in routine clinical settings and as a clinical end-point in trials.

Turning to services, a review of international standards and guidelines has been undertaken to develop recovery-oriented practice guidance (5). Qualitative analysis of thirty best practice documents using inductive, semantic-level thematic analysis identified sixteen dominant themes, which were grouped using interpretive analysis. Four practice domains were identified: supporting personally defined recovery, working relationships, organizational commitment, and promoting citizenship. Supporting personally defined recovery involves *offering* evidence-based interventions as a resource for the service users to use in their recovery journey, rather than imposing treatments in their best interests. The second domain of working relationships is central because synthesized evidence from qualitative research and recovery narratives shows that turning points in the lives of people using services are often linked to authentic encounters with clinicians. Put colloquially, for clinicians it's not just what you do (i.e., what treatments you offer) but how you do it.

The third domain of organizational commitment highlights the impact of beliefs about core business ("what we're really here to do"), which shape expectations, discourse and behaviour. For example, if the core business of the mental health system is public protection, then the positive risk-taking which is needed to grow as a human will be discouraged. The final domain of promoting citizenship underlines that service users are more than their illness. A recovery orientation involves changing the centre of gravity from treating illness (so the person can subsequently get on with his/her life) to supporting personhood and citizenship (to which end treatments may contribute, for some people at some points in their life). One litmus test for this shift may be the extent to which it is perceived to be as much part of the job for a clinician to work with a local employer, training him/her to make the work-place adjustments needed for people with mental health problems to work, as it is to provide treatment for individuals. Indeed, it has been argued that clinicians of the future will need to become social activists (6).

Two initiatives in England can be positioned within these four practice domains. At the level of organizational commitment, 30 of 55 mental health trusts (service provider groups) are involved in the ImROC project (7). This is founded on a framework of ten key "organizational challenges", developed through co-production in workshops involving over 300 mental health staff, service users and family members (8). The challenges include workforce transformation (e.g., towards a workforce in which 50% of care delivery is by peer professionals who have personal experience of mental illness), a transition from risk-oriented to safety-oriented services, and establishment of recovery education centres in which staff and service users can learn from the expertise of each other.

A team-level intervention has also been developed for adult mental health services, which is explicitly aimed at supporting the CHIME recovery processes and addresses two other practice domain levels. The REFOCUS intervention (9) involves training staff in three working practices which support personally defined recovery: understanding the service user's values and treatment preferences as a starting point for care planning; assessing and amplifying strengths; and supporting goal-striving by the service user. Staff are also trained to use coaching as an interpersonal style in their working relationships with service users. The intervention is currently being evaluated across thirty community-based teams (10).

A remaining scientific challenge in England is to develop interventions that promote citizenship. These may require radical re-thinking of the role of clinicians, and are likely to involve community development initiatives based on partnership between people using and working in services, rather than individual-level treatments provided by professional experts.

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# A stigma perspective on recovery

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Recovery, as outlined by Bellack and Drapalski, describes a process through which a person aims to live "a satisfying, hopeful and contributing life even with limitations caused by illness", striving for "full human potential or 'personhood'". It is thus about healing identity, and somehow it sounds like a positive, optimistic echo to the spoilt identity observed by Goffman (1963) in his classic work on stigma (1). In many ways, "recovery" and "stigma" seem to be related, but contrary concepts. While recovery claims a "half full" glass of opportunities, stigma points out the "half empty" glass of discrimination and devaluation. Where recovery sees challenges, stigma identifies obstacles. Is "recovery" thus just a new, positive way to describe the same ongoing struggle of persons with mental illness for a better life?

Recovery has introduced a novel, optimistic and healing tone into the field of mental health care. It is an energizing, user-driven movement pursuing evidently valuable goals. Probably, it does not need to prove its legitimacy by offering a coherent, comprehensive theoretical framework. If, however, recovery is conceptualized as a theoretical model that offers itself to scientific evaluation, we argue that the stigma perspective is essential to eliminate some of the blind spots of recovery.

In their model of recovery and self-efficacy, Bellack and Drapalski try to root recovery in established theoretical frameworks. Quite convincingly, they choose Bandura's self-efficacy concept as a key element influencing the process of recovery, and they refer to stigma as an element contributing to those adverse personal experiences that reduce self-efficacy and thus hinder recovery. Using an individual perspective, their model thus accounts for the discouraging reality stigma creates for those with mental disorders. In fact, a lot of recent stigma research has focussed on the individual stigma experiences of persons with mental illness. Studies have examined different approaches to cope with stigma (2), highlighting the importance of individual, flexible strategies. Other studies have examined individual consequences of self-stigma and have found that internalization of common prejudices reduces morale and self-efficacy (3), or increases hospitalization (4). Here, stigma and recovery offer different perspectives on the individual experiences of persons with mental illness and, with their differing emphasis on resources and restraints, these perspectives complement each other.

However, the stigma perspective is not genuinely an individual one. Rooted as well in sociology as in social psychology, a lot of research on mental illness stigma has taken a societal perspective (5), trying to understand the *cultural context* that shapes individual experiences of those with mental illness and to describe discriminatory mechanisms that act to their disadvantage. From this societal perspective, theoretical models have been developed and tested, capable of predicting public attitudes and identifying target attitudes for change – because public attitudes do change (6). Another important societal aspect of stigma is structural discrimination, occurring when structures like legislation, rules, health insurance coverage etc. are set up in a way that puts members of a certain minority at a disadvantage (7). The rich theoretical work on stigma has enabled the exchange with other scientific discourses on discrimination, for example related to racism (8). Here, the individual perspective of recovery needs completion by the societal perspective offered by stigma research. Stigma is not primarily an issue of changing attitudes of the affected individual, but of changing public attitudes. Discrimination is not primarily a problem of individual coping, but of injustice.

Finally a word of caution seems warranted. The emphasis of the recovery movement on consumer control of their life may have unwanted consequences. It could increase public attributions of offset-responsibility for the condition to those afflicted (9), holding individuals responsible for the way they cope with their illness. By increasing blame, this could increase the stigma attached to mental illness instead of reducing it. Nowadays, in neoliberal times, there is also a certain risk that this "responsibilization" (10) of patients may in the long run result in reducing public spending on mental health services instead of helping improving their quality.

Research on recovery should be aware of these restrictions to the recovery perspective. Probably, research on recovery would benefit most from reassessing those models and findings that have been well established, for example in the field of stigma research, and utilize a multitude of perspectives to promote recovery. This would be an ambitious and worthwhile research agenda, and it would help to implement recovery as a natural element of mental illness and mental health care.

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# Agency: its nature and role in recovery from severe mental illness

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Bellack and Drapalski offer a thoughtful overview of the concept of recovery as it has emerged from the consumer led movement. They note how, in parallel with empirical studies suggesting that recovery is more the rule than the exception for persons with schizophrenia, this movement emphasizes how wellness for persons with these conditions is often a deeply subjective, personal, and elusive matter. The authors argue that subjective accounts of wellness may not be sufficient objects for scientific study and call, therefore, for a sharpening of an operationalized definition of the more personal aspects of recovery. The review hones in on the issues of agency and self-efficacy as themes close to the heart of the consumer movement and ends with a description of efforts to develop a questionnaire which assesses these and related constructs.

For the purpose of this commentary we will focus on the issue of agency in schizophrenia, touching on its definition, role in recovery, and measurement. Agency seems an essential issue to carefully consider. It is both a theme which connects different subjective domains of wellness, and a construct that can be seen as one of the driving forces behind the consumer movement. The recovery movement is not only a reaction to paternalistic practices but also a response to certain scientific paradigms which emphasized outcome as the result of the interaction of larger social and biological forces, neglecting the role played by individual persons as they make their own sense of what is happening in their lives (1). At its heart, the recovery movement asserts that people are not passive sites where biological and social forces meet, but agents who interpret their experiences and whose meaning making plays an essential role in outcome (2).

To develop agency in the context of recovery from mental illness involves a range of discrete and more synthetic activities in which people are actively making meaning of their lives. To be an agent in a life with (or without) mental illness can mean deciding to do a particular thing (e.g., return to work) or to assert basic rights while facing injustice. To recapture agency can also, however, refer to regaining a larger experience of ownership and authorship of one's thoughts, feelings and actions. Agency thus involves creating flexible and coherent accounts of the meaning of events which can be understood by others. The importance of agency and its independence from other aspects of illness and social injustice can be found in several compelling first person accounts (3,4). These reports demonstrate how recovery can involve becoming able to find a way to describe what is wrong and not wrong in one's lives, what is mourned, hoped for and what is to be done about it, all in a manner that is accessible and understandable by others. The reader of these first person accounts finds a narrator who has become able to speak with a coherent authenticity that is not reducible to hope, symptom remission, or quality of life. The recovering person is not reading from a script or just endorsing a particular belief. The authors appear to be in recovery in a subjective sense in that in their writings they are making consensually valid meaning of the dilemmas they face in the world, no matter how difficult it is to be in that world.

If recovery involves recapturing a sense of agency, then it seems essential to understand the roots of this phenomenon. Bellack and Drapalski discuss the effects of stigma on agency and the related construct of self-efficacy. A wealth of evidence supports this, but a danger here is that lack of agency is understood as essentially a cognitive error or erroneous belief. Agency as discussed in the broader context of human experience is always reflective, embodied, and intersubjective (5); not merely a conclusion one has drawn about oneself. To be an agent is the result of the recognition and basic experience one has at an elemental bodily level which can be shared with and understood by other people. Indeed, empirical research has consistently found that many with schizophrenia struggle to perceive themselves as agents in experimental paradigms as well as to construct coherent accounts of themselves as agents across their lifetime (6-9).

This broader view of agency has important implications for the need of scientific study of recovery. For one, it affirms and clarifies some of the issues raised by Bellack and Drapalski. By understanding the intersubjective requirements of the experience of agency, we can see that legitimacy of subjective accounts of well-being rests on whether or not they can be understood and accepted by others. This is not to say that there are objectively right or wrong answers. For instance, meaningful accounts of threats to well-being can accept or reject the medical model and still be understood by others. It is just that not all accounts of life challenges make sense. We would suggest that this leaves the field in need of the measure Bellack and Draplalski are carefully developing but also procedures for quantitatively assessing the coherence and adaptiveness of the kinds of sense which persons make of mental illness as they recover. Examples of this needed alternative are recent work suggesting that the complexity and coherence of the personal narratives of persons with schizophrenia are a predictor of success in a work program and also may mediate the impact of impairment in neurocognition on social function (10).

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# Consumer models of recovery: can they survive operationalism?

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Bellack and Drapalski have clearly set out the case for the importance of the recovery model, and how it is currently influencing US state mental health systems to move away from paternalistic services which generate "feelings of hopelessness and helplessness". They cite the work of consumer-professionals in demonstrating the subjective nature of mental illness and recovery, while at the same time undermining the impact of this work by questioning whether these spokespeople may be "a distinct good outcome subgroup" (a problem which could be overcome if all psychiatric patients were encouraged to give their histories in their own words, rather than these being recorded only via case-notes and diagnostic categories!).

The authors' main concern is to develop an operational definition of recovery based on the US Substance Abuse, Mental Health Services Administration (SAMHSA) definition, and to introduce their recovery measure (Maryland Assessment of Recovery in People with Serious Mental Illness, MARS). They begin by quoting the most influential definition of recovery, that of Anthony (1). However, along with most of those who quote Anthony, they omit his second paragraph, which is of high importance to consumers and users of mental health services: "Recovery from mental illness involves much more than recovery from the illness itself. People with mental illness may have to recover from the stigma they have incorporated into their very being; from the iatrogenic effects of treatment settings; from lack of recent opportunities for self-determination; from the negative side effects of unemployment; and from crushed dreams. Recovery is often a complex, time-consuming process. Recovery is what people with disabilities do. Treatment, case-management and rehabilitation are what helpers do to facilitate recovery" (1).

Anthony's definition is inconveniently long, and controversially uses the word "iatrogenic", but it helps to do two things: to place the ownership of the process of "recovery" firmly with the person recovering, and to emphasize the complexity of the process.

Bellack and Drapalski's operational definition, and presumably the MARS instrument, is strongly linked to their own theoretical perspective that "personal agency" and "self-efficacy" are the key principles underpinning recovery. "Self-efficacy" is defined as a set of beliefs about one's capacity to manage internal and external experiences. Since this is their starting point, it is not surprising that the MARS tool in operation confirms that these psychological aspects are the main determinant of recovery.

While following the logic of their argument so far, I found myself out of tune with their conclusions, and began to question their process of operationalizing recovery.

They begin the process by dismissing consumer models of recovery as insufficiently psychological. This in itself could be a point of disagreement with consumer researchers, but maybe it is also reasonable to examine the value of operationalization itself. P. Bridgman developed the concept of operationalization in the early 20th century, to enable researchers to carry out empirical work in areas where the variables do not have an essence observable to the senses. Green (2) says that Bridgman set out to provide a simple solution to a complex problem. However, "like all too many simple solutions to complex problems, it turned out to not really solve the problem at all". If the measure defines the concept, which has no essential existence of its own, there can be no convergence in psychological discovery, since there is nothing to be discovered. In the case of recovery, operationalization risks rendering meaningless or irrelevant the ontological aspects of recovery, and most of the narrative material which clearly matters to individuals who view their recovery as the result of their personal journey through life, and their process of making sense of their own experiences.

Slade (3), a UK psychologist, found a similar problem in writing about recovery. He made a distinction between "clinical recovery" which has been tightly defined, to make it suitable for use in empirical research, and "personal recovery", which has "high ecological validity – it emerges from the narratives of people with mental illness who describe themselves as recovered or in recovery", but which is more difficult to operationalize. Slade argues however that it is not impossible to use empirical quantitative research to investigate what helps recovery, and points to principal components emerging from narrative studies, including "empowerment, hope and optimism, knowledge and life-satisfaction".

The MARS instrument is at an early stage of testing and may prove to be a valuable addition to the existing panoply of recovery measures, but it would be unwise to dismiss, as the authors do, measures based on consensus conferences and work done directly with consumers. Some of these measures have already been tried and tested, including the Recovery Assessment Scale (4). This was tested on 1,824 persons with serious mental illness, and produced five factors: personal confidence and hope, willingness to ask for help, goal and success orientation, reliance on others, and no domination by symptoms. An Australian study (5) found that it had convergent validity with other recovery measures, and was consistent with consumer literature on recovery.

Social relationships are found to be another key factor in recovery. A Swedish study (6) based on 58 patient narratives found that "recovery from mental illness is a social process in which the helping factors have to do with the quality of social relationships, irrespective of whether those are formed in inpatient care, in medicinal circumstances, in psychotherapy, with families or friends, or in the company of other persons in the same situation".

Similarly, research led by service users in the UK found relationships to be the most important common factor in helping people with mental health problems to build coping strategies (7).

Given Bellack and Drapalski's findings that recovery oriented treatment was not significantly influencing recovery outcomes, there is a need to remain aware of all the aspects of what recovery means to consumers.

Perhaps, instead of adjusting the model of recovery to fit established research methods and concepts, it would be better to adjust the research methods to fit the complex concept of recovery.

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# Recovery: is consensus possible?

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I did not feel comfortable reading Bellack and Drapalski's paper. Perhaps this is because my journey to this point has been different from theirs. Mine started with lived experience of major mental distress and mental health services in my late teens and twenties. Since then I have applied the values of the international consumer/survivor movement to urge services and wider society to respect the madness experience, facilitate pathways through it and treat us as equal citizens. In a word, these values sit on a platform of self-determination. As a mental health commissioner in New Zealand, I had a responsibility to help articulate what a recovery approach means in the national context. This included a critique of medical and other deficits approaches, a questioning of compulsory treatment and promoting social justice as a key to recovery; these themes are not always strong in the international recovery literature (1).

The core of my discomfort probably arises from the fact that I do not sit on the same side as the authors in the "broad church" of people who sign up to recovery. Bellack and Drapalsky seem to be in the aisle which lacks a deep critique of the dominant beliefs and structures that drive service and societal responses to madness. For some of us who were educated primarily through our lived experience and the analysis of the consumer/survivor movement, a critique of these beliefs and structures is essential for the transformation of services and societies so that they support recovery.

Bellack and Drapalski describe recovery as a model, but I have always seen it more as a philosophy. A model is a template, process or design that guides what people do, whereas a philosophy in this context is a set of beliefs that guides the moral value we ascribe to what people do. A model can be empirically tested, but a philosophy can only be argued because of its fundamental nature. I believe we should determine the moral value of a model of practice before we apply empirical research to test its efficacy. This put me at odds with Bellack and Drapalski's lament that because the "recovery model" is based on personal accounts, qualitative studies and political consensus statements, it is vague and hard to test. This may be frustrating for some research psychologists who seem to rate empiricism over values, but it does not worry me.

I also felt the authors were slightly critical of consumer/survivor leaders and academics for failing to come up with a tidier ensemble of data for them to analyse and test. If this is the case, I believe their criticism is ill-founded. Although there are a growing number of consumer/survivor academics (and who knows – the authors may count themselves among them), they are a tiny, scattered and poorly resourced group. To my knowledge, there are no departments of user/survivor studies anywhere in the world, but of course there are hundreds of well-resourced psychology departments.

I am not against aggregating people's experiences or measuring indicators of recovery in individuals or populations, but I get the impression that the authors' primary loyalty is to the application of a rather reductionist form of science, whereas mine is to the honouring of lived experience and to justice in service systems and in wider society. This is why the authors and people with a worldview close to mine might have difficulty reaching a consensus on how to apply research to recovery, but it is important that we try.

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# The vicissitudes of the recovery construct; or, the challenge of taking "subjective experience" seriously

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"Professional and scientific communities have not sufficiently appreciated the subjective experiences of people with severe mental illness, and their ability to recover from the debilitating effects of their illness", state Bellack and Drapalski. Their paper makes an important contribution to the growing body of research that is committed to countering erroneous assumptions regarding outcomes in people diagnosed with severe mental illness.

The ongoing scientific and philosophical debates over how to conceptualize and operationalize "recovery" (1-4) mean that this commentary could move in a number of directions. I have chosen to push the authors harder vis-à-vis certain assumptions embedded within their argument. While they state that they endorse the importance of service users' "subjective experience", their paper ultimately reinstalls orthodox psychological formulations grounded in traditional models of objectivity, reliability and validity. They claim that "the consumer model of recovery" employs "vague constructs that have not been objectively defined", and they emphasize the need for "more objective measures of course of illness and community functioning that are viewed as relevant by scientists, clinicians, family members, and legislators". Such claims end up side-stepping the challenge that the "consumer model of recovery" (an umbrella term encompassing several distinct formulations) has posed to the way in which key psychiatric constructs – e.g., "course of illness", "symptoms", "community functioning" – are defined and operationalized.

This consumer model, rather than being hampered by "vagueness" in its use of constructs, poses challenging questions to psychiatry: its commitment to taking seriously the phenomenological richness and social constitution of subjective experience entails rethinking traditional ways of defining and measuring well-being and illness. Bellack and Drapalski impose a distinction between the potential "practical and conceptual implications" of recovery (which include "productive activity like work or school" and "improved social relationships") and the "subjective well-being of consumers" (which is implicitly less valorized). In contrast, some of the most incisive thinking regarding recovery challenges such a distinction, by demonstrating how subjective well-being is itself *constituted through and built upon* sustaining and equitable social relations (5). The consumer model of recovery, far from turning away from the investigation of "practical and conceptual implications" that lie beyond issues of individual well-being, has been at the forefront of developing more nuanced accounts of empowerment that attend to transformation of the collective, as well as of the individual consumer. These accounts imply not only that individual agency and self-efficacy are constituted through social relations; they also mean that the analytical frame through which we both understand and seek to transform agency and self-efficacy needs fundamentally to attend to social relations, and the inequalities of power that so frequently characterize them. Tew et al's (6) recent review of the role of social factors in enabling or impeding recovery featured "self-efficacy" as only one of a much wider range of important elements that included social identities, social inclusion and community development.

Bellack and Drapalski are not alone in resorting to familiar constructs such as self-efficacy at the very moment of engagement with new paradigms (here, consumer models of recovery). This is an indication, I believe, of the challenges to psychiatric epistemologies and methods that emerge when conventional researchers engage with the thinking and methods deriving from the service user movement (7). There are, indeed, ongoing and unresolved debates concerning the extent to which conventional ways of measuring outcomes in psychiatry (e.g., through the use of standard psychological constructs, and the development and use of scales) are commensurable with the epistemologies underlying models developed by consumers.

One creative response to this dilemma has been the development of a new way of constructing scales, one that attempts seriously to address consumers' "subjective experience", rather than simply relying on clinicians' definition of a "good outcome". Bellack and Drapalski describe how the iterative development of their MARS scale was led by six clinical scientists, who supplemented their work through interviews with six independent experts and a panel of consumers. While consultation with consumers is a welcome advance on *no* consultation with consumers, such a model retains the familiar balance of power, whereby consumers' knowledge regarding recovery is positioned as far less "expert" than that of the clinical scientists and "independent experts". Contrast this with the consumer-led model to develop outcome measures described by Rose et al (8), which has been used successfully to develop outcome measures for cognitive-behavioral therapy in psychosis (9) and in assessments of continuity of care (10). This model develops outcome measures entirely from the perspective of mental health service users, and is premised on the argument that "it is mental health service users who know from the inside what treatments and services benefit them and which are detrimental" (8).

Bellack and Drapalski would no doubt disagree that the development of outcome measures for recovery ought to follow such a route, given their argument that these measures must also be "viewed as relevant by scientists, clinicians, family members and legislators". And this leads us to the nub of the issue. Bellack and Drapalski wish to move the recovery model away from "political decisions" (which characterize the consumer movement) and towards "empirical evidence of the validity of the model" (which characterizes the practice of science). Rose al's alternative method for developing outcome measures demonstrates that this is a false divide: *all* empirical evidence regarding the validity of the recovery model will be inflected by "political decisions" regarding whose perspectives count in adjudicating a good outcome.

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# Consumer perceptions of recovery: an Indian perspective

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In many developing countries, including India, the consumer/family movement is still nascent, albeit growing in strength gradually. It is also likely that some of the rather paternalistic treatment settings do not value or seek the opinion of consumers as often as they should be doing. In this context, we undertook at the Schizophrenia Research Foundation (SCARF) a small exploratory study to ascertain consumer perspectives of recovery from schizophrenia.

SCARF is a non-governmental not-for-profit organization which runs outpatient services in urban Chennai, India as well as in rural and semi-urban areas. A brief study on the patients' perspectives on the indicators of recovery was conducted in SCARF outpatient department in Chennai among patients with schizophrenia and schizoaffective disorder. An inclusion criterion was the presence of at least partial insight (i.e., the patient acknowledged having a mental disorder).

Of the 164 patients who fulfilled the entry criteria and who were approached during a period of 30 working days, 100 gave consent to participate in the study. They were asked open ended questions regarding what they personally considered as indicators of recovery. Then, we submitted them a list of possible indicators of recovery generated on the basis of available literature, consultation with other mental health professionals and prior discussion with 25 patients and their families. Snowballing technique was also used whereby new items generated during the interviews were added to the list for the next interview. The patients were then asked if their recovery had to be "externally validated" by some source such as their family, employer, treating team, or if it was "internal", whereby they only needed to be convinced that they had recovered.

From the interviews, a total of 31 indicators were generated. The most common theme that emerged was the equation of recovery with the absence of symptoms (88% of the respondents) and not having any more relapses (73%). Getting back to their regular lives in terms of functioning (70%) and being able to handle the associated responsibilities (62%) were also deemed important. To 65%, recovery meant not having to take medicines any more. More women (80%) than men responded this way.

Among the respondents, all the students, 71% of the unemployed, 66% of those attending a sheltered workshop at SCARF and 63% of those employed mentioned "holding on to a job" as the most important indicator of recovery. About 35% mentioned getting married and having children as indicators.

Previous work from this centre has underscored the importance of work and occupation in the recovery of patients (1,2). The fact that health insurance in India does not cover mental illness and the state does little in terms of welfare programmes for this group of people makes it critical for many of these patients, specially those from lower economic groups, to find a job to support themselves and their families.

Although personal attributes such as self-efficacy did not figure in the list, they appeared to be quite central to many of the themes which emerged (e.g., statements about efficacy in social and work situations, the need to get on with life, to become independent and to take decisions on one's own).

Patients mentioned internal validation six times more frequently than external validation. In particular, many patients stated that their perception that they were good on the job was more important than the employer's perception.

A heartening feature was that, although the group consisted of primarily chronic patients with a mean duration of illness of about 11 years, none thought that recovery was impossible to achieve and all were able to articulate personalized indicators of recovery.

It is unclear from this study whether our patients viewed mental health service as too paternalistic and felt overwhelmed by a sense of hopelessness and helplessness, as described by Bellack and Drapalski. This needs further research, possibly in varied health care settings. It appears that this sample of patients had a fairly realistic view of recovery and accorded a high premium to social functioning, specially with respect to employment.

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# Consumer recovery: a call for partnership between researchers and consumers

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Consumers of mental health services, especially in Africa, will agree with Bellack and Drapalski that time to develop consumer recovery models backed with empirical evidence is now. Evidence on the ground reveals that recovery models have a biomedical approach of curing the disease as a primary focus and not promoting consumers' ability to stand the challenges of living with a mental health condition.

As a case, Zambia has two national recovery institutions that accommodate 160 consumers and were expected to receive central funding for operations. Alas, for many years now funding has not been allocated to these institutions, hence affecting service delivery (1). These centres have become a dumping ground for persons with mental health conditions, contributing negatively to the recovery process. This is unacceptable and a violation of the human rights of persons with mental health conditions. It is a human rights violation because it denies persons with mental health conditions an opportunity to attain and maintain maximum independence, vocational ability and full inclusion and participation in the community and in all aspects of life (2).

Recovery services must be available to persons with mental health conditions as close as possible to their own communities, including in rural areas (3). Comprehensive recovery programmes and services should be organized, strengthened and extended, based on the multidisciplinary assessment of individual needs and strengths. It is our hope that we develop recovery models that will allow persons with mental health conditions to realize their own abilities, work productively and fruitfully and be able to contribute to their own communities (4). This includes communities who seek to provide an environment that enables persons with mental health conditions to maximize their own potential, to improve their quality of life and have the same opportunities and responsibilities as people who do not have impairments. We see recovery services as a vehicle to poverty reduction, information sharing and persons with mental health conditions taking responsibility for their own development.

In the development of recovery services, it is of paramount importance that persons with mental health conditions take part on an equal basis with others. It is therefore essential to promote actively an environment in which persons with mental health conditions can effectively and fully participate in the construction of recovery models without discrimination. Our personal experience stands to provide a strong and unshakeable influence to ensure that recovery models are evidence based. Our life experience stands ready to direct and guide the development of consumer-centred recovery models that are comprehensive.

To achieve this is a call for partnership between researchers and consumers. This call for partnership in recovery is crucial, despite not receiving the attention it deserves. Opportunities for promoting evidence based recovery models are available through the growth of networking among people active in the field of mental health. These networks should be formed by professionals, family members and persons with mental health conditions.

Partnership is the way to go. The importance of partnership in developing evidence based recovery models is that it brings the combination of complementary skills and wider pool of knowledge. It is also cost-effective as each partner will specialize in a certain aspect of the recovery model during development. It further goes to provide the moral support that allows for more creative brainstorming.

Therefore, there is need for researchers and consumers to invest in developing partnership, so that evidence based recovery models are constructed globe over, for the benefit of the consumers, more especially those living in low and middle income countries, because they are worst hit in terms of lacking recovery services.

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# An empirically derived approach to the classification and diagnosis of mood disorders

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*This article describes a system for diagnosing mood disorders that is empirically derived and designed for its clinical utility in everyday practice. A random national sample of psychiatrists and clinical psychologists described a randomly selected current patient with a measure designed for clinically experienced informants, the Mood Disorder Diagnostic Questionnaire (MDDQ), and completed additional research forms. We applied factor analysis to the MDDQ to identify naturally occurring diagnostic groupings within the patient sample. The analysis yielded three clinically distinct mood disorder dimensions or spectra, consistent with the major mood disturbances included in the DSM and ICD over successive editions (major depression, dysthymia, and mania), along with a suicide risk index. Diagnostic criteria were determined strictly empirically. Initial data using diagnostic efficiency statistics supported the accuracy of the dimensions in discriminating DSM-IV diagnoses; regression analyses supported the discriminant validity of the MDDQ scales; and correlational analysis demonstrated coherent patterns of association with family history of mood disorders and functional outcomes, supporting validity. Perhaps most importantly, the MDDQ diagnostic scales demonstrated incremental validity in predicting adaptive functioning and psychiatric history over and above DSM-IV diagnosis. The empirically derived syndromes can be used to diagnose mood syndromes dimensionally without complex diagnostic algorithms or can be combined into diagnostic prototypes that eliminate the need for ever-expanding categories of mood disorders that are clinically unwieldy.*

**Key words:** Mood disorders, suicidality, depression, dimensional diagnosis, prototype matching

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Two questions are at the heart of psychiatric diagnosis: how to classify psychopathology, and how to apply that taxonomy to diagnose patients, particularly in practice. Initial efforts to address the first question with respect to mood disorders involved a clinical expert approach, in which the premiere psychopathologists of the early 20th century attempted to find order in the clinical cases they were seeing (1). This remained the predominant approach until the 1970s, when criteria designed for research purposes proved useful in standardizing diagnosis across sites. Versions of these criteria became the official taxonomy of affective disorders in the DSM-III (2). Since that time, researchers have gradually honed the criteria for the various disorders for both the DSM and ICD, but this has dramatically increased the number of disorders, reflecting in part the recognition that mood disorders are spectrum disorders, with patients displaying a range of symptom presentations (3-6).

With the emergence of research-based criteria, a new approach came not only to classification (the first question central to psychiatric diagnosis) but also to assigning diagnoses in practice using that taxonomy (the second question). The DSM-III and subsequent editions of the DSM and ICD provided highly specific criteria and algorithms for combining those criteria into a categorical diagnosis. Advantages included substantially higher interrater reliability, at least for research purposes (7,8). Over time, however, a number of disadvantages became apparent, including tradeoffs between validity and reliability, with cutoffs for diagnosis, severity, and duration of illness often arbitrary; and an increasing number of disorders and not-otherwise-specified (NOS) diagnoses (see 9). Further, a consensus has emerged across a range of disorders, including mood disorders, that categorical (present/absent) diagnosis does not reflect the nature of clinical reality as well as dimensional diagnosis (the extent to which a syndrome is present) (10-12). For decades, dimensional diagnosis has actually been the "unofficial" norm in research, with instruments such as the Hamilton Rating Scale for Depression (13) and the Beck Depression Inventory (14) used to measure both severity of depression and treatment response, given that a patient in a clinical trial can fall just below threshold but remain highly symptomatic. Another emerging problem was artifactual comorbidity (15,16), which reflects a number of causes, including overlapping criterion sets and the nature of spectrum pathology, in which clear demarcations among disorders may be lacking. A related problem is clinical utility. The mood disorder section of DSM-IV comprises nearly 100 pages of text and includes so many disorders, each with its own criteria, subcriteria, and cut-points, that clinicians find them minimally useful and hence often do not use the manual as designed, instead relying on mental prototypes they have built up over the course of training and experience (17,18).

At this point it is worth asking whether there may be other ways of addressing both questions: how to identify diagnostic syndromes and criteria and how to diagnose them in clinical practice. With respect to the first question, a straightforward empirical alternative comes from psychometrics and scale development. A diagnostic manual is, in essence, a set of "scales" (criterion sets) for measuring constructs (diagnoses), which could be optimized empirically by applying procedures such as factor analysis to large, comprehensive item sets comprising potential diagnostic criteria. Factor analysis can identify dimensions (e.g., major depression, dysthymia, mania) and criteria (items with high factor loadings on these dimensions) that could be used to select and construct diagnoses that could be treated both dimensionally and categorical (as occurs in much of medicine, e.g., when a patient who crosses a dimensional threshold is diagnosed as having "high" or "borderline high" blood pressure), without the necessity of complex algorithms.

With respect to the second question, a method gaining momentum for both axis I and axis II disorders is prototype matching, which combines diagnostic criteria into standardized prototypes (7,19,20). Clinicians diagnose the similarity or "match" between a patient's clinical presentation and a set of paragraph-length prototypes, considering each prototype *as a whole,* working with, rather than against, the naturally occurring ways humans tend to categorize (21,22). Prototype matching preserves a syndromal approach to diagnosis (23), consistent with both DSM and ICD diagnosis, while allowing dimensional assessment, using a scale from 1 (no match between the patient's clinical presentation – the default diagnosis) through 5 (very good match). Where categorical diagnosis is desired (e.g., to facilitate clinical communication), ratings ≥4 indicate presence of the disorder and ratings of 3 indicate "features".

Thus, rather than distinguishing multiple categories of bipolar disorder, a patient would be diagnosed for current symptoms as well as history of the extent to which he or she had matched prototypes of major depression and mania. A patient who currently or previously manifested manic features at a level of 3 or above would be diagnosed with bipolar spectrum illness, with the nature of that illness defined by severity of manic/hypomanic and depressive episodes. For clinical communication, patients who experienced subthreshold features of both mania and major depression could be described as "cyclothymic", and for research purposes, the combination of ratings on each of the 1-5 scales (or more reliable scales developed via factor analysis) could help identify candidates for different forms of treatment or predict important outcomes such as global functioning.

In this study we derived diagnostic syndromes factor-analytically, producing a set of dimensions that obviates the need for complex diagnostic algorithms.

## METHODS

As part of a larger study on the classification of personality pathology, we contacted a random North American sample of 1201 psychiatrists and psychologists with at least 5 years of practice experience post-training (8,24). Because clinicians provided all data and no patient identifying information was disclosed to the investigators, clinicians rather than patients provided informed consent, as approved by the Emory University Institutional Review Board.

We asked clinicians to describe "an adult patient you are currently treating or evaluating who has enduring patterns of thoughts, feelings, motivation, or behavior – that is, personality patterns – that cause distress or dysfunction". However, we emphasized that patients need not have a DSM-IV personality disorder diagnosis. Patients met the following additional inclusion criteria: >18 years of age, not currently psychotic, and known reasonably well by the clinician (using the guideline of >6 clinical contact hours but less than 2 years to minimize confounds due to treatment). To ensure random selection of patients, clinicians consulted their appointment calendars to select the last patient they saw during the previous week who met study criteria.

Clinicians completed the Clinical Data Form (CDF) using data obtained over the course of regular interactions with the patient and any available prior data (e.g., from psychiatric records). The CDF gathers information on demographic, diagnostic, etiological (family and developmental history), and adaptive functioning variables (e.g., 16) from clinically experienced observers. CDF data show strong agreement with data collected independently from patients (25). To assess axis I diagnoses as made naturalistically in clinical practice, we asked clinicians to make present/absent diagnoses of each of the most prevalent disorders in DSM-IV. For family history variables, to cue memory and maximize reliability and validity, we asked specifically about first and then about second degree relatives and instructed clinicians to respond conservatively if they were unsure.

This study utilizes data from a random subsample of 187 clinicians who completed the Mood Disorder Diagnostic Questionnaire (MDDQ). This is a 79-item questionnaire designed to allow clinically experienced informants to rate patients on symptoms of mood disorders written in the form of diagnostic criteria so they can be used both as scales for measuring mood disturbance and for identifying diagnostic groupings and criteria empirically. The items were derived from current mood disorder criteria as well as research and clinical observation (26,27). Items are scored on a 7-point scale.

The 187 clinician respondents were highly experienced (20.1±7.7 years practice experience) and diverse in theoretical orientation, with no single orientation endorsed by >25% of the sample.

We subjected the MDDQ items to exploratory factor analysis, using percent of variance accounted for, the scree plot, parallel analysis (28,29), replicability across estimation procedures and rotations, and conceptual coherence of the obtained factors to select the final number of factors rotated. We used a Promax (oblique) rotation because of our expectation of correlated factors. We report here the unweighted least squares (ULS) solution. After identifying diagnostic groupings empirically, we created psychometric scales to assess each disorder by selecting the items with the highest factor loadings and deleted items with low item-to-scale correlations or high cross-correlations (e.g., $r \geq .60$) with other scales.

We assessed initial validity of the diagnostic dimensions in a number of ways. First, to evaluate the accuracy of a dimensional scale against a dichotomous standard (e.g., presence/absence of major depression as diagnosed by the treating clinician), a receiver operating characteristic (ROC) curve charts the relationship between true positive and false positive identification rates at each cut-point on the dimensional scale. The area under the curve (AUC) is then calculated as a summary statistic of the test's ability to classify individuals correctly. The AUC statistic allows for comparison of a test's discriminative ability against chance (where AUC ≤.50 suggests chance discrimination). We used the AUC and logistic regression (testing whether empirically derived diagnoses predicted only the diagnosis they were expected to predict) vis-à-vis naturalistic DSM-IV clinical diagnoses assessed from the CDF to assess validity (diagnostic accuracy).

Second, to compare the relative validity of clinicians' categorical DSM-IV diagnoses and the empirically derived dimensions, we correlated both sets of diagnoses with Global Assessment of Functioning (GAF) from the DSM-IV, a composite measure of psychiatric functioning (hospitalizations and suicide attempts), and family history of major depression and bipolar disorder. We then utilized hierarchical multiple regression, predicting GAF scores and psychiatric history from all of the DSM-IV mood disorders as diagnosed naturalistically in Step 1 and the empirically derived syndromes in Step 2, to see whether the empirically derived diagnoses showed incremental validity over DSM-IV diagnosis in clinical practice. Finally, we constructed paragraph-length diagnostic prototypes from these scales that could be used in everyday practice.

## RESULTS

Patients were 42.8% female, 69% treated in private practice (with the remainder seen in a range of settings, from outpatient clinics to forensic units), 73.3% Caucasian (with the remainder primarily African-American and/or Hispanic), with a mean age of 42.6±11.5 years, and spanning all social classes. GAF scores spanned a broad range, from 10 to 92 (mean 58.4±12.2); 28.9% of the sample had had at least one psychiatric hospitalization. Clinicians knew the patients well, with an average of 17.3±26.5 months in treatment.

Factor analysis suggested a 4 or 5 factor solution, with the 4-factor solution yielding 4 coherent dimensions, accounting for 44.0% of the variance. We labeled the factors "major depression", "dysthymia", "mania" and "suicide risk", and created psychometric scales comprised of 6 to 19 items. The internal consistency (reliability) of each scale was very high (Table 1). We expected substantial cross-correlations among the scales because they were all measuring mood pathology and because research has shown mood disorders to be part of a broader internalizing spectrum (30,31). Intercorrelations were moderate as predicted, suggesting independent disorders within a broader spectrum (Table 2).

**Table 1** Scale reliabilities and inter-correlations

| | Major depression | Dysthymia | Mania | Suicide risk |
|---|---|---|---|---|
| *Reliability (alpha coefficients)* | .94 | .94 | .88 | .92 |
| *Inter-correlations* | | | | |
| Major depression | | | | |
| Dysthymia | .50* | | | |
| Mania | .23* | -.05 | | |
| Suicide risk | .58* | .35* | .25* | |

*p≤0.001

The scales showed high diagnostic accuracy. Table 3 presents AUC performance statistics for each dimension in classifying patients with respect to either their clinical diagnosis or history of suicide attempts. The stepwise logistic regression analyses presented in Table 4 illustrate that the scales also have high discriminant validity (i.e., they are able to distinguish near-neighbor disorders). The dimensions predicted the diagnostic constructs they were expected but not those they were not expected to predict. For example, major depression significantly predicted only a major depressive disorder clinical diagnosis; dysthymia significantly predicted dysthymic disorder diagnosis alone; mania scores predicted bipolar I, bipolar II, and cyclothymic diagnoses but not major depressive disorder or dysthymic disorder (unipolar spectrum disorders); and suicide risk scores significantly predicted prior suicide attempts.

As a further test of validity (Table 5), we compared the mood disorder dimensions with clinicians' DSM-IV diagnoses in predicting adaptive functioning, psychiatric history, and family history of major depression and bipolar disorder. The empirically derived diagnoses showed a predictable pattern of associations with these variables, with higher correlations than clinicians' DSM-IV diagnoses.

To assess the incremental validity of the empirically derived dimensions relative to DSM-IV categorical diagnoses, we used hierarchical linear regression to GAF scores and a composite measure of psychiatric history (psychiatric hospitalizations and suicide attempts), entering DSM-IV diagnoses in Step 1 and empirically-derived diagnoses in Step 2 (Table 6). In both cases the empirically derived dimensions outperformed DSM-IV diagnoses, accounting for incremental variance over and above the mood disorder diagnoses. Variance inflation factors ranged from 1.2 to 1.8, with a mean of 1.4, indicating no violations of multicollinearity assumptions of multiple regression.

Finally, we used the statements from the MDDQ that comprised the scales for each disorder to construct prototypes that could be used in DSM-5 or ICD-11 to diagnose patients in everyday practice (see example of major depression prototype in Figure 1).

## DISCUSSION

Despite enormous advances in the understanding of mood disorders, more than thirty years of incremental adjustments to the categories and criteria has produced a burgeoning number of disorders and diagnostic algorithms that are un-

**Table 2** Item-to-scale correlations

| | Major depression | Dysthymia | Mania | Suicide risk |
|---|---|---|---|---|
| *Major depression* | | | | |
| Looks sad, unhappy or despondent | .83** | .48** | .10 | .49** |
| Is fatigued, tired, or lacking in energy; everyday activities require enormous effort | .82** | .39** | .15* | .45** |
| Mood is consistently depressed; does not respond to efforts to "cheer him/her up" | .82** | .43** | .04 | .51** |
| Is unable to enjoy usual interests and activities | .80** | .33** | .07 | .43** |
| Reports feeling sad, unhappy or despondent | .79** | .54** | .07 | .46** |
| Depressed mood has a serious impact on ability to function at work, school, etc. | .79** | .39** | .13 | .36** |
| Has trouble enjoying him/herself; derives little pleasure from life | .79** | .43** | .03 | .45** |
| Depression or agitation interferes with ability to concentrate; has trouble reading, sustaining a conversation, etc. | .75** | .33** | .30** | .49** |
| Feels hopeless about the future | .71** | .46** | .14 | .55** |
| Depressed mood seems qualitatively different from prior mood states (even ordinary sadness), as if a cloud or fog has descended | .71** | .32** | .20** | .34** |
| Is emotionally paralyzed; has trouble making everyday decisions | .67** | .46** | .14 | .42** |
| Tends to wake up in the middle of the night; has trouble staying asleep | .66** | .30** | .32** | .42** |
| Seems slowed down in thought, speech, movement, etc. | .65** | .32** | .15* | .33** |
| Has lost interest in friends, acquaintances, etc. | .65** | .21** | .20** | .36** |
| Has trouble falling asleep; has initial insomnia | .64** | .23** | .34** | .40** |
| Wakes up early in the morning and is unable to go back to sleep | .60** | .28** | .13 | .35** |
| Depression is noticeably worse in the morning | .58** | .21** | .22** | .33** |
| Arms and legs feel "heavy" or leaden | .54** | .21** | .27** | .22** |
| Has diminished appetite | .52** | .20** | .08 | .35** |
| *Dysthymia* | | | | |
| Feels guilty | .45** | .86** | -.05 | .34** |
| Tends to become self-critical instead of legitimately angry at others | .38** | .86** | -.14 | .26** |
| Tends to blame self for bad things that happen; attributes misfortunes to own enduring psychological traits or attributes | .42** | .82** | -.07 | .29** |
| Feels inferior, inadequate, incompetent, or a failure | .59** | .82** | .02 | .47** |
| Tends to feel he/she has let other people down | .42** | .80** | -.03 | .29** |
| Worries about disappointing significant others | .36** | .80** | -.14 | .21** |
| Tends to ruminate over perceived past errors, bad deeds, etc. | .45** | .79** | -.02 | .34** |
| Is self-critical; sets high standards for self and chronically fears he/she is not living up to them (do not score for feelings of inadequacy unaccompanied by high standards) | .44** | .78** | -.08 | .31** |
| Has low self-esteem | .58** | .77** | .04 | .39** |
| Works hard to avoid being criticized or disliked | .20** | .75** | -.06 | .08 |
| Tends to fear rejection or abandonment by significant others | .40** | .68** | .07 | .33** |
| Derives sense of self-worth from others' appraisals; needs approval, assurance, etc. | .16* | .62** | .11 | .08 |
| Derives sense of self-worth from achievements and accomplishments | -.01 | .43** | -.14 | -.03 |
| *Mania* | | | | |
| Mood cycles rapidly between high, irritable, or manic states and depressed or mixed states over a relatively brief period (e.g., weeks or months) | .22** | .08 | .74** | .23** |
| Takes undue risks (e.g., financial ventures, reckless driving, illegal activities) with minimal concern for consequences, in a way that differs from his/her usual functioning | .12 | -.15* | .71** | .16* |
| Abnormally elevated, expansive, or irritable mood leads to impairment in usual occupational functioning, social activities, or relationships, or necessitates hospitalization | .17* | -.01 | .70** | .15* |

**Table 2** Item-to-scale correlations *(continued)*

| | Major depression | Dysthymia | Mania | Suicide risk |
|---|---|---|---|---|
| *Mania* | | | | |
| Has boundless energy, in a way that differs from his/her usual functioning | .16* | .03 | **.65**** | .15* |
| Speech is rapid, nonstop, or pressured, in a way that differs from his/her usual functioning | .15* | .08 | **.64**** | .13 |
| Engages in thrill seeking or otherwise "high gain", reward-driven behavior (e.g., gambling, spending, indiscriminate sexual encounters), in a way that differs from his/her usual functioning | .02 | -.18* | **.64**** | .08 |
| Jumps rapidly from idea to idea in a way that can make communication difficult to follow | .15* | .05 | **.64**** | .19* |
| Experiences thoughts as racing or coming "a mile a minute", in a way that differs from his/her usual functioning; may feel like thoughts come to mind so quickly that he/she cannot keep up with them | .26** | .15* | **.64**** | .23** |
| Is explosive or flies into rages, in a way that differs from his/her usual functioning | .20** | -.12 | **.59**** | .28** |
| Gets angry or irritable more easily than usual; has a "short fuse" | .27** | -.11 | **.58**** | .20** |
| Is hypersexual, in a way that differs from his/her usual functioning | -.00 | -.16* | **.57**** | .05 |
| Is restless, fidgety, or unable to sit still; has psychomotor agitation | .18* | .06 | **.57**** | .22** |
| Is grandiose or unduly self-confident (e.g., believes he/she can "do anything"), in a way that differs from his/her usual functioning | -.05 | -.26** | **.48**** | -.03 |
| Has little need for sleep (e.g., feels rested after only a few hours of sleep) | .08 | -.01 | **.48**** | .06 |
| Mood changes consistently and dramatically with changes of seasons (e.g., mood becomes worse in the winter) | .26** | .10 | **.45**** | .16* |
| Is unusually driven or goal-directed (socially, at work or school, etc.), in a way that differs from his/her usual functioning | .04 | .10 | **.40**** | .02 |
| Thought and language seem overly expansive, philosophical, or abstract, in a way that differs from his/her usual functioning | -.02 | .01 | **.40**** | .07 |
| *Suicide risk* | | | | |
| Wishes he/she were dead or feels would be better off dead | .59** | .36** | .16* | **.90**** |
| Is consumed by suicidal thoughts | .52** | .32** | .23** | **.90**** |
| Feels life is not worth living | .67** | .38** | .17* | **.86**** |
| Has well-elaborated suicide plans | .39** | .21** | .17* | **.86**** |
| Has made genuine suicide attempts | .40** | .16* | .23** | **.81**** |
| Has deliberately injured self without suicidal intent (e.g., cutting or burning) | .36** | .30** | .30** | **.74**** |

*p<0.05; **p<0.01

**Table 3** Receiver operating characteristic (ROC) curve results for Mood Disorder Diagnostic Questionnaire (MDDQ) dimensions prediction of corresponding mood disorder diagnoses and suicide history

| MDDQ dimensions | Clinical diagnoses | Area under curve | Standard error |
|---|---|---|---|
| Major depression | Major depressive disorder | .78* | .04 |
| Dysthymia | Dysthymic disorder | .67* | .04 |
| Mania | Bipolar I disorder | .83* | .07 |
| | Bipolar II or cyclothymia | .78* | .07 |
| Suicide risk | Prior suicide attempt | .87* | .03 |

*p≤0.001

wieldy for clinical use. The current diagnostic systems in widespread use today reflect tremendous wisdom drawn from research, theory, and practice. Our study built on this wisdom by including criteria from the DSM-IV and ICD-10 as well as items drawn from research and clinical observation into the instrument from which we derived diagnostic dimensions (e.g., 13,14,27).

Factor-analytic results were concordant with the major diagnoses that have evolved over a century of psychiatric classification, identifying three disorders (major depression, dysthymia, and mania) as well as markers for suicide risk. Whereas major depression and dysthymia could have been so highly correlated that factor analysis could not distinguish them, they were in fact clearly distinct. Empirically derived criteria for these disorders were a mixture of current diagnostic criteria, descriptions based on clinical observation, and other relevant research not addressed in current taxonomies, such as the distinction, common to the cognitive-behavioral theory of Beck (26) and the psychoanalytic theory of Blatt (27), of two paths to vulnerability to depressive pathology, one reflecting self-criticism and the other interpersonal concerns such as loss and rejection. The results speak to the

**Table 4** Logistic regression analysis (forward) of Mood Disorder Diagnostic Questionnaire (MDDQ) variables as predictors of clinician mood disorder diagnoses and reported suicide history

| | | b | SE b | Wald | Exp(B) (odds ratio) | -2 log likelihood | Nagelkerke $R^2$ |
|---|---|---|---|---|---|---|---|
| Major depressive disorder | | | | | | 185.35 | .39 |
| | MDDQ-major depression | 1.00 | .21 | 22.46** | 2.71 | | |
| | MDDQ-mania | -.97 | .28 | 11.90** | .38 | | |
| Dysthymic disorder | | | | | | 225.16 | .19 |
| | MDDQ-dysthymia | .40 | .13 | 9.09* | 1.05 | | |
| | MDDQ-mania | -.79 | .25 | 9.85* | .45 | | |
| Bipolar disorder | | | | | | 63.34 | .29 |
| | MDDQ-mania | 1.24 | .38 | 10.77** | 3.47 | | |
| Cyclothymia or bipolar II | | | | | | 74.29 | .20 |
| | MDDQ-mania | 1.26 | .37 | 11.41** | 3.54 | | |
| History of suicide attempts | | | | | | 129.32 | .47 |
| | MDDQ-suicide risk | 1.12 | .22 | 26.56** | 3.05 | | |

*p<0.01, **p≤0.001

**Table 5** Correlations between Mood Disorder Diagnostic Questionnaire (MDDQ) dimensions and clinicians' DSM-IV diagnoses with outcome and historical variables

| | Clinician dichotomous diagnoses (N=1201) | | | | | MDDQ dimensions (N=187) | | |
|---|---|---|---|---|---|---|---|---|
| | Major depression | Dysthymia | Bipolar disorder | Cyclothymia or bipolar II | Mood disorder NOS | MDDQ-major depression | MDDQ-dysthymia | MDDQ-mania |
| Global Assessment of Functioning (GAF) score | -.28*** | .07* | -.18*** | -.09** | -.07* | -.48*** | -.24*** | -.26*** |
| Psychiatric history[a] | .19*** | -.03 | .18*** | .10*** | -.01 | .35*** | .07 | .29*** |
| Relative with major depression | .19*** | .07* | -.01 | .05 | -.06* | .24*** | .26*** | .08 |
| Relative with bipolar disorder | .00 | -.06* | .21** | .13*** | -.04 | .04 | -.03 | .19** |

[a]Standardized mean of hospitalization and suicide attempt; *p<0.05, **p<0.01, ***p≤.001

strengths of the current nosology, given that factor analysis empirically reproduced the three major mood spectrum disorders despite the fact that the instrument included multiple items not included in the DSM or ICD and that the disorders are overlapping in phenomenology and etiology (15,30-32).

The study provided initial evidence for the validity of the empirically derived diagnostic dimensions. Diagnostic efficiency statistics and logistic regressions indicated that the identified dimensions predicted clinicians' naturalistic diagnoses, with a pattern suggesting both convergent and discriminant validity, although future research with independent assessors is clearly necessary. Further, in correlational analysis, the empirically-derived dimensions were stronger predictors of global functioning, psychiatric history, and family history than their corresponding DSM-IV diagnoses. Perhaps most strikingly, the hierarchical regression analyses showed strong evidence of incremental validity of the empirically-derived dimensions over and above clinician's naturalistic mood disorder diagnoses in predicting GAF ratings and psychiatric history, with DSM diagnoses dropping out of the equation when the empirically derived dimensions were included. The only partial exception was for bipolar disorders, demonstrating the importance of assessing not only current symptoms (as was done with MDDQ in this study) but also past episodes, which are crucial to distinguishing unipolar and bipolar depression.

Despite the ways our results were consistent with current ways of diagnosing mood disorders, the data also suggest important areas of divergence that could both enrich and simplify diagnosis. Perhaps most important is the consensus of researchers and practitioners that clinical conditions are better represented dimensionally than through multiple categorical diagnoses representing variants of the same pathological spectrum. For example, DSM-IV defines bipolar I disorder in terms of the presence of full-threshold mania combined with a history of some level of severity of depressive episodes, usually but not always meeting criteria for a major depressive episode. It defines bipolar II disorder, in contrast, in terms of a positive history of major depression combined with a history of hypomania. Cyclothymia is defined by a mixture of subthreshold major depression and subthreshold mania (hypomania).

The problems with this approach are legion. Most importantly, the cutoffs for both a major depressive episode and

**Table 6** Incremental validity of Mood Disorder Diagnostic Questionnaire (MDDQ) dimensions over clinician naturalistic diagnosis for predicting Global Assessment of Functioning (GAF) and psychiatric history

| | Stand. β | R | Adjusted $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|
| *GAF score* | | | | |
| Block 1: Clinician mood diagnosis | | .32 | .09 | .11*** |
| Major depression | -.23*** | | | |
| Dysthymia | .03 | | | |
| Bipolar disorder | -.19** | | | |
| Cyclothymia or bipolar II | -.07 | | | |
| Block 2: Clinician diagnosis and MDDQ dimensions | | .54 | .26 | .18*** |
| Major depression | -.05 | | | |
| Dysthymia | .06 | | | |
| Bipolar disorder | -.14* | | | |
| Cyclothymia or bipolar II | -.02 | | | |
| MDDQ-major depression | -.39*** | | | |
| MDDQ-dysthymia | -.08 | | | |
| MDDQ-mania | -.12 | | | |
| *Psychiatric history (standardized mean of hospitalizations and suicide attempts)* | | | | |
| Block 1: Clinician mood diagnosis | | .32 | .08 | .10*** |
| Major depression | .19** | | | |
| Dysthymia | -.10 | | | |
| Bipolar disorder | .19** | | | |
| Cyclothymia or bipolar II | .09 | | | |
| Block 2: Clinician diagnosis and MDDQ dimensions | | .45 | .17 | .10*** |
| Major depression | .09 | | | |
| Dysthymia | -.08 | | | |
| Bipolar disorder | .12* | | | |
| Cyclothymia or bipolar II | .05 | | | |
| MDDQ-major depression | .30*** | | | |
| MDDQ-dysthymia | -.06 | | | |
| MDDQ-mania | .15* | | | |

*$p<0.05$, **$p<0.01$, ***$p\leq0.001$

mania are arbitrary, with major depressive episode requiring at least 5 of 9 symptoms from criterion A for an arbitrary period of two weeks, so that 4 of 9 symptoms could lead to a diagnosis of bipolar II, cyclothymia, depressive disorder NOS, or bipolar disorder NOS. A dimensional system, whether adopting the scales identified here empirically or simple 5-point diagnoses used for prototype matching from paragraph-length descriptions derived from those scales, avoids arbitrary cut-points and categorical diagnostic distinctions, but allows for multivariate research testing the question of what combinations or dosages of different treatments are more useful at what quantitative level of current or past history of major depression spectrum, dysthymia spectrum, or mania spectrum pathology.

A related problem is the lack of any evidence for the superiority of the complex diagnostic algorithms that make DSM-IV so difficult to use over a simple prototype-matching approach to clinical diagnosis (or, for research purposes, a set of scales of the sort derived here empirically, in which the mean of item ratings replaces complex algorithms). Given that some patients have atypical presentations (e.g., characterized more by agitation than a subjective sense of sadness), this could readily lead a clinician or researcher to misdiagnosis a patient in the midst of a clear major depressive episode. In contrast, using a prototype matching approach, clinicians would make only three diagnostic decisions: to what extent does this patient's presentation resemble the prototypes of major depression, dysthymia, and mania (and to what extent has the patient likely met each one in the past). As the description of the prototype of major depression derived in this study indicates (Figure 1), clinicians would have little difficulty recognizing the disorders or discriminating them from each other, likely reducing artifactual comorbidity with one another as well as with near-neighbor disorders (e.g., generalized anxiety disorder).

As we have argued elsewhere (see 33), for disorders for

*For each diagnosis, please form an overall impression of the symptom presentation of the patient. Then rate the extent to which the patient's presentation matches or resembles the prototype.*

| | |
|---|---|
| **5** very good match (patient ***exemplifies*** this disorder; prototypical case) | **Diagnosis** |
| **4** good match (patient ***has*** this disorder; diagnosis applies) | |
| **3** moderate match (patient has ***significant features*** of this disorder) | **Features** |
| **2** slight match (patient has minor features of this disorder) | |
| **1** no match (description does not apply) | |

**Major depression**

*Summary statement: Individuals with major depression tend to be sad and despondent in a way that differs from their normal mood state, to derive little pleasure from life and their usual interests and activities, and to have somatic signs of depression such as disturbances in sleep and appetite.*

Patients who match this prototype look or report feeling depressed or despondent. Their mood seems qualitatively different from their normal state (or from ordinary sadness), as if a cloud has descended on them. They are consistently depressed, and do not respond except perhaps momentarily to efforts to "cheer them up". Their depressed state is likely to have a serious impact on their ability to function at work, school, etc. Individuals who match this prototype have trouble enjoying themselves, derive little pleasure from life, and feel hopeless about the future. They are unable to enjoy their usual interests and activities and tend to lose interest in friends, acquaintances, and other relationships. They feel fatigued, tired, or lacking in energy, so that everyday activities may require enormous effort. Their arms and legs may feel "heavy" or leaden, and they may appear slowed down in their thought, speech, movement, etc. Depression or uncharacteristic agitation may interfere with their ability to concentrate (e.g., they may have trouble reading or sustaining a conversation). They may feel emotionally paralyzed and have trouble making everyday decisions. Individuals who match this prototype tend to have somatic changes alongside their depressed mood and lethargy, such as diminished appetite or a loss of interest in food. They may have diurnal variation in their symptoms, with depression noticeably worse in the morning. They experience a range of sleep disturbances, such as waking up in the middle of the night, having trouble staying or falling asleep, and waking up early in the morning and being unable to go back to sleep.

**Figure 1** Diagnostic prototype of major depression

which a given patient has at least clinically significant features (prototype ratings ≥3 on a 5-point scale), clinicians could make secondary ratings of severity of the syndrome or subsyndromes (e.g., subjective experience of depression, somatic symptoms), age of onset of first episode, number of prior episodes, and presence or absence of psychotic symptoms (for both major depression and mania) or other dimensions that prove empirically or clinically useful as new research emerges, such as rapid cycling or seasonality. For dysthymia, for example, secondary ratings of duration (number of years' duration) and persistence of symptoms across the day would likely yield more information, from both a clinical and research perspective, than an *a priori* and arbitrary rule that the symptoms must be present most of the day every day for 2 years.

The current study has several limitations. First, patients were selected by clinicians to have at least a minimum of personality pathology (because the research was part of a broader taxonomic project on personality pathology). However, no axis II personality disorder diagnosis was required. Westen and Arkowitz-Westen (34) have demonstrated that subthreshold personality pathology occurs in the vast majority of patients in treatment for axis I disorders, particularly mood disorders, so that it is unlikely that this sample differs substantially from a more completely random selection of patients seen in clinical settings. The fact that clear, coherent mood disorder factors emerged in this sample despite this potential source of bias suggests that the findings are particularly robust to sampling error. Nevertheless, future research should use both general clinical samples (e.g., from field trials) and data from research interviews (e.g., 35).

Second, the study relied on a single informant per patient, the treating clinician. Previous research has supported the use of clinician-informant ratings using multiple instruments designed for clinically experienced informants, which strongly correlate with data provided by independent psychiatric interviews (36-38) and patient self-reports (25). Further, clinicians are the primary users of diagnostic manuals, and relying on quantified clinical observation in their design provides an important and underutilized complement to self-report and structured interview ratings. Nevertheless, future research is needed to determine both the extent to which clinician diagnoses of these empirically-derived syndromes correspond to diagnoses made by other observers, and whether prototype versions of them show the same advantages as assessments based individual items (criteria).

A final limitation is the use of an exclusively North American sample. In cultures in which psychiatrists or other mental health professionals are concerned that the diagnostic criteria identified here might not include culturally relevant items, however, the 79-item set of the MDDQ could be expanded to include additional hypothesized culturally-specific indicators, and a factor analysis could readily be performed on an adequately-sized sample. The results could either support or disconfirm hypotheses about the necessity of adding criteria or syndromes relevant to that culture. The advantage of this approach is that it lets clinicians do what they do well (observe) and lets statistical procedures do what they do well (aggregate data).

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# Assessing the diagnostic validity of a structured psychiatric interview in a first-admission hospital sample

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*The use of structured psychiatric interviews performed by non-clinicians is frequent for research purposes and is becoming increasingly common in clinical practice. The validity of such interviews has rarely been evaluated empirically. In this study of a sample of 100 diagnostically heterogeneous, first-admitted inpatients, the results of an assessment with the Structured Clinical Interview for DSM-IV (SCID), yielding a DSM-IV diagnosis and performed by a trained non-clinician, were compared with a consensus lifetime best diagnostic estimate (DSM-IV) by two experienced research clinicians, based on multiple sources of information, which included videotaped comprehensive semi-structured narrative interviews. The overall kappa agreement was 0.18. The sensitivity and specificity for the diagnosis of schizophrenia by SCID were 19% and 100%, respectively. It is concluded that structured interviews performed by non-clinicians are not recommendable for clinical work and should only be used in research with certain precautions. It is suggested that a revival of systematic theoretical and practical training in psychopathology is an obvious way forward in order to improve the validity and therapeutic utility of psychiatric diagnosis.*

**Key words:** Structured interview, diagnosis, schizophrenia spectrum, psychopathology

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Structured psychiatric interviews are now the diagnostic gold standard in psychiatric research and are making a rapid inroad into daily clinical work. In research, non-clinicians equipped with structured interviews often perform diagnostic assessments. Structured interviews have been shown to yield high diagnostic reliability among novice interviewers (1).

A structured interview is defined as "an interview consisting of… predetermined questions presented in a definite order". These questions "yield diagnostic information based on the patient's responses and the interviewer's observations. The interviews… identify symptoms and syndromes which meet specific diagnostic criteria" (2).

Structured interviews made their appearance as part of the operational revolution in psychiatry, in the quest of improving diagnostic reliability. They were strongly advocated for by a major figure of the DSM-III project, Robert Spitzer, in a seminal article entitled "Are clinicians still necessary?" (3). The potential unreliability in the quality and quantity of the diagnostic information elicited across the patients ("information variance") is here countered by the application of identical questions, presented to the patients in a fixed sequence. Another source of unreliability, potentially involved in the process of converting clinical information into diagnostic criteria ("criterion variance"), is minimized by formulating the interview questions in a wording as close as possible to the phrasings of the diagnostic criteria. In sum, the structured interview reduces the initiative, inference and reflection by the interviewer almost to zero, obviating clinical psychiatric experience and education in psychopathology, thus allowing a suitably trained non-clinician to perform the diagnostic assessment.

The validity of structured interviews has rarely been explored (4,5). Moreover, it is sometimes claimed to be untestable in principle, due to the unavailability of a "gold standard" (3,6), a claim implicitly reiterating the premise that clinicians' assessments cannot serve this purpose because of their unreliability (6,7). This argument is non-sequitur, however. Although clinicians may vary in their knowledge and skills, the fact is that our current classification is predominantly anchored in descriptive, phenomenological distinctions. To the best of our knowledge, no psychopathological-conceptual or phenomenological argument in favor of structured interviews has ever been advanced (apart from pointing to the unreliability of clinicians).

In this study, which is part of a larger project on the conceptual and empirical foundations of psychopathological assessment, we examined the diagnostic validity of a structured interview, performed by a suitably trained non-psychiatrist, in a diagnostically heterogeneous, first-admission hospital sample.

Our measure of validity was the consensus lifetime best estimate diagnosis (8), based on a semi-structured conversational interview conducted by a reliability-trained, experienced psychiatrist, followed by an independent review of the diagnostic material by another senior clinician and a final consensus evaluation using all existing sources of diagnostic information.

We chose the Structured Clinical Interview for DSM-IV (SCID, 9) as a representative structured interview because it is very frequently used (e.g., a PubMed search conducted on November 16, 2011 showed that 11 out of the 15 latest publications on schizophrenia in which a diagnostic evaluation was carried out used the SCID). The SCID is designed to be an efficient, user-friendly, and reliable clinical interview for making DSM diagnoses (10). It incorporates the use of *obligatory questions*, corresponding to DSM-IV operational criteria, and an algorithm for arriving at the final diagnoses. The pre-formulated questions can be answered with a "yes" or

”no”. It is possible to ask for more detailed descriptions. Yet, the SCID user’s guide stresses the importance of asking the questions as formulated in the interview schedule: “Do stick to the initial questions as they are written…” (11). The SCID has been found to yield highly reliable diagnoses for most axis I disorders (1,5,12,13).

## METHODS

### Sample

The study was carried out at the Psychiatric Center Hvidovre, a department of the University of Copenhagen providing psychiatric service to a population of 150,000 in a catchment area of the City of Copenhagen (there are no private psychiatric in-patient facilities in Denmark). The department has a rich and long psychopathological research tradition of adoption, high risk, linkage and clinical sample studies in schizophrenia, most recently in the domain of anomalies of self-experience (14-18).

All consecutive first admissions to the department were screened for eligibility over 18 months, starting from June 2009, independently of their clinical diagnosis. In order to be included, patients had to be considered capable of tolerating lengthy interviews (which naturally excluded aggressive, agitated or severely psychotic patients) and to provide informed consent. Exclusion criteria comprised primary or clinically dominating alcohol/substance abuse, history of brain injury, mental retardation, organic brain disorder, and age >65 years. Due to ethical concerns, involuntarily admitted and legal patients (both categories representing an important proportion of first-admitted inpatients) were also excluded.

Six patients had to be excluded after enrolment because, upon closer examination, they did not meet the inclusion criteria (n=3), did not show up for the interview appointments (n=2) or withdrew consent after completed interviews (n=1). Sixteen patients declined to participate in the study (clinical diagnoses: 4 with schizophrenia, 1 with schizotypal disorder, 9 with major depression, 1 with anxiety and 1 with deferred diagnosis).

The final sample consisted of 34 men and 66 women (sex distribution reflecting the selection process), with a mean age of 27.7 years (range 18-65 years), representing 82% of the patients initially invited to participate.

### Interviews

All patients were interviewed twice during the same week. The mean time from admission to the first interview was 13 days (range 2-71). All interviews were videotaped.

The first interview was conducted by a recent MA in clinical psychology (RR), specifically trained and certified as a SCID-interviewer by the University of California Los Angeles Center for Neurocognition and Emotion in Schizophrenia. The interview consisted of the SCID-I and the Schizotypal Personality Disorder module from the SCID-II. The interview was conducted in a fully structured way: the interviewer faithfully asked the pre-formulated questions in the predefined order. The interviewer was allowed to ask for more information, and to modify the rating if relevant new information emerged during the interview. The average length of the interview was 1.5 hours. An experienced research psychiatrist supervised the performance of the interview and the allocation of the DSM-IV diagnosis, in order to prevent errors.

The second interview was carried out by an experienced psychiatrist (JN). This was a semi-structured conversational interview (SSCI), including a thorough psychosocial history, a description of the illness evolution (including the circumstances leading to admission), the Operational Criteria Checklist (OPCRIT, 19) expanded with additional items from the Schedule for Affective Disorders and Schizophrenia (SADS-L, 20), the Examination of Anomalous Self-Experiences scale (EASE, 21), the perceptual section from the Bonn Scale for the Assessment of Basic Symptoms (22), and an assessment of first rank symptom continua as described by Koehler (23) and of abnormal expressive features (e.g., affect modulation, contact quality, gaze, stereotypies, mannerisms, disorganization, and disorder of language) (15,16,24).

The interviewer explored the items in a sequence that was felt appropriate and adequate to the subject’s own concerns and responses, according to the phenomenological principles proposed by Jaspers and others (25). The *structure* of the interview relied on the interviewer’s obligation to score all items. Yet, the concrete, practical conduct and sequence of the interview was dictated by the dynamics and context of the encounter; i.e. the style was free and conversational. The questions were contextually adapted and followed the logic of the patient’s narrative, typically asking for more details or further examples. The patient was encouraged to speak freely, was rarely interrupted, and was given time for reflection and recollection. Scoring of a symptom was never based on a simple yes/no answer, but always required self-descriptions, i.e. the examples formulated in the patient’s own words. The average time to complete the SSCI was 3.5 hours, sometimes requiring a splitting of the interview into two separate sessions. On the basis of the interview, JN allocated the DSM-IV diagnosis.

The project director (JP), a senior research clinician, independently reviewed the diagnostic material elicited in the SSCI and allocated his own DSM-IV diagnosis. There was a diagnostic agreement between JN and JP in 93% of patients.

Finally, the consensus lifetime best estimate (CLBE) of DSM-IV diagnosis was allocated to each patient at a consensus meeting of JP and JN, using all information available (videos, notes, charts’ clinical information, including second informant descriptions) on each patient. This DSM-IV diagnosis was the study’s gold standard.

### Statistics

Kappa statistics was used to calculate the agreement between the diagnostic procedures. The sensitivity of the SCID was calculated as the number of true positives divided by the sum of true positives and false negatives. The specificity was calculated as the number of true negatives divided by the sum of true negatives and false positives.

For the purpose of the analyses, we operated with the following hierarchy of DSM-IV diagnostic categories: 1. schizophrenia, 2. other (non-affective) psychosis, 3. bipolar illness, 4. major depression, 5. schizotypal disorder, 6. other diagnosis. The category "other diagnosis" contains mainly anxiety disorders, obsessive-compulsive disorder and personality disorders other than schizotypal.

## RESULTS

The cross-tabulation of SCID and CLBE diagnoses appears in Table 1. The kappa of the overall diagnostic concordance between these two approaches was 0.18. The corresponding kappa between SSCI and CLBE was 0.92. The kappa agreement between the SCID and the CLBE with the sample dichotomized into the schizophrenia spectrum (schizophrenia, other psychosis, schizotypal disorder) vs. not-spectrum (all other diagnoses combined) was 0.31.

Using the CLBE as gold standard, the sensitivity and specificity of the SCID for schizophrenia alone were 19% and 100%, respectively. The corresponding figures for all non-affective psychoses combined (i.e., schizophrenia and other non-affective psychosis) raised to 34% and 96%. Finally, the sensitivity and specificity of the SCID for the schizophrenia spectrum (schizophrenia, other non-affective psychosis and schizotypy) were 44% and 97% respectively. If the hierarchy was altered to let schizotypal disorder precede affective disorders, the sensitivity of SCID for the schizophrenia spectrum raised slightly to 53%, whereas the specificity remained unchanged (97%).

## DISCUSSION

A limitation of this study is that the patient selection tended to eliminate flamboyant psychotic cases, making the sample diagnostically more "difficult", thus perhaps amplifying the shortcomings of the structured interview.

The overall agreement between the SCID-derived and CLBE DSM-IV diagnoses was very low (kappa 0.18). The SCID tended to diagnose more patients with major depression and fewer with schizophrenia and schizotypal disorder. It was clear that the major source of the diagnostic differences was information variance. A brief, or sometimes monosyllabic response to a question of the structured interview was often short of crucial psychopathological information that might have been elicited in an epistemologically more adequate manner.

Fennig et al (4) showed a high diagnostic concordance for schizophrenia and bipolar disorder between the SCID diagnosis by non-clinician interviewers and the best consensus diagnostic estimates performed by psychiatrists. However, that particular study was limited to patients who were *already* diagnosed with a psychotic condition. More importantly, the SCID-elicited information also served as the main source of the best consensus estimate. This implies little information variance between psychiatrists and non-psychiatrists, i.e. clinician- and non-clinician raters made their diagnoses upon similar information. Minimizing information variance is exactly one of the cornerstones of the structured interview, but it does not guarantee the quality (validity) of the information.

As already mentioned, the operational revolution in psychiatry was motivated by a lack of diagnostic reliability, incompatible with psychiatry's scientific aspirations. The operational criteria and the corresponding structured interviews emerged as a solution. The structured interview aspires to achieving a quasi-experimental, stimulus-response purity of the behavioristic paradigm (26,27), in order to circumvent or shortcut the complexities of human subjectivity, discourse and communication, which are always at play in patient-

**Table 1** DSM-IV diagnoses made by a trained non-clinician using the Structured Clinical Interview for DSM-IV (SCID) vs. those made by two experienced clinicians on the basis of a consensus lifetime best estimate

| | | **Best consensus diagnoses** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Schizophrenia** | **Non-affective psychosis** | **Schizotypal disorder** | **Major depression** | **Bipolar** | **Other** | **Total** |
| **SCID diagnoses** | Schizophrenia | 8 | 0 | 0 | 0 | 0 | 0 | **8** |
| | Non-affective psychosis | 8 | 0 | 1 | 0 | 0 | 1 | **10** |
| | Schizotypal disorder | 8 | 0 | 5 | 0 | 0 | 0 | **13** |
| | Major depression | 10 | 2 | 11 | 14 | 0 | 13 | **50** |
| | Bipolar | 1 | 1 | 2 | 0 | 0 | 0 | **4** |
| | Other | 7 | 1 | 2 | 0 | 1 | 4 | **15** |
| | **Total** | **42** | **4** | **21** | **14** | **1** | **18** | **100** |

clinician psychiatric exchange (28,29). The crucial issue of how to elicit, explore and convert the patient's experience (first-person perspective) into a third-person data format, used for the diagnostic allocation, is unaddressed. On the contrary, a basic assumption is the confidence in the face value of "yes/no" answers, for instance, that a "yes" is confirmatory of the diagnostic criterion being asked about. That confidence reflects another implicit belief, namely that the symptoms have their mode of existence as ready-made, well-defined and well-articulated mental objects in the patient's consciousness, only waiting for adequate prompting in order to appear in full view.

This study only examines the validity of a structured interview performed, *lege artis*, by a specifically trained non-psychiatrist. We have no data on the potential validity of a structured interview schedule in the hands of an experienced, reliability-trained clinician. Such a clinician, taking advantage of the possibility of asking for more detailed information (allowed for in the interview guide), may likely arrive at valid diagnoses, but that would happen in a manner *not different in kind* from the semi-structured interview employed in this study. In other words, once the clinician-interviewer is granted the liberty for contextually appropriate (i.e., semi-structured) in-depth conversation with the patient, any particular interview scheme would probably do equally well (provided that the clinician is knowledgeable, skilled and reliability-trained).

An unintended consequence of the operational revolution has been a general decline in psychopathological competence (30) and no strikingly evident improvement in the reliability and the validity of clinicians' diagnoses. The way forward, both in research and clinical work, is to revive teaching and training of psychopathology (31). Unfortunately, such education today is often reduced to a training in the use of a particular, locally selected, interview schedule. Yet, it is not enough to memorize the questions of a scheme and the diagnostic criteria. Teaching psychopathology implies targeted literature studies, weekly peer discussions of concepts (e.g., what does the concept of delusion or hallucination signify; are their operational definitions conceptually coherent and phenomenologically faithful?), and live, supervised interviews, followed by discussions of the interview technical aspects, interpersonal interaction, and the nature and diagnostic significance of the elicited information.

In conclusion, this study demonstrated a poor diagnostic performance of a structured psychiatric interview conducted by a for-the-purpose trained non-clinician. Such an interview approach cannot be recommended for clinical work, due to a high proportion of misdiagnoses. The high specificity for the diagnosis of schizophrenia (100%) may suggest a limited applicability of such interviews in research with the purpose of a *confirmation* of an antecedent, clinician's diagnosis.

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# Lessons learned in developing community mental health care in East and South East Asia

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*This paper summarizes the findings for the East and South East Asia Region of the WPA Task Force on Steps, Obstacles and Mistakes to Avoid in the Implementation of Community Mental Health Care. The paper presents a description of the region, an overview of mental health policies, a critical appraisal of community mental health services developed, and a discussion of the key obstacles and challenges. The main recommendations address the needs to campaign to reduce stigma, integrate care within the general health care system, prioritize target groups, strengthen leadership in policy making, and devise effective funding and economic incentives.*

**Key words:** Community mental health care, East and South East Asia, mental health policies, non-governmental organizations, human rights, family involvement, target groups, economic incentives

***(World Psychiatry 2012;11:186-190)***

This paper is part of a series describing the development of community mental health care in the various regions of the world (see 1-6), produced by the Task Force appointed by the WPA as part of its Action Plan 2008-2011 (7,8). The WPA Guidance on Steps, Obstacles and Mistakes to Avoid in the Implementation of Community Mental Health Care, developed by the Task Force, has been published in this journal (9). In this article, we describe these issues in relation to East and South East Asia.

The region includes 15 countries (4 in East Asia and 11 in South East Asia), with marked cultural, religious, and socioeconomic diversity. All these countries devote only a small fraction of their total health budget to mental health (less than 1% in low income countries; less than 5% in high income countries) (10). Because of varied historical backgrounds and colonial heritages, health care systems diverge even among neighbouring countries.

## OVERVIEW OF MENTAL HEALTH POLICIES IN THE REGION

Table 1 shows the presence of mental health policies and laws in the region. Despite 20 years of effort, China does not yet have a national mental health law, but it has instituted a mental health plan (15), while Hong Kong has a mental health ordinance (16). In Thailand, mental health legislation came into effect in 2008 (14).

**Table 1** Mental health policies and laws in countries of East and South East Asia

| | | Mental health legislation | |
|---|---|---|---|
| | | Present | Absent |
| Mental health policy or programme | Present | Indonesia, Japan, Malaysia, Mongolia, Myanmar, North Korea, Singapore, South Korea, Thailand | Cambodia, China, Laos, Philippines, Viet Nam |
| | Absent | Brunei | Timor-Leste |

Sources: Jacob et al (11), World Health Organization (12), Tebayashi (13), Thailand Mental Health Act (14)

Family involvement is a characteristic of the region. Even in Singapore and Malaysia, where the Western influence is quite prevalent, the family plays a major role in the patient's admission and treatment. Involuntary admission with family consent is legalized in Japan and South Korea. China also permits involuntary admission with family consent, although the practice is not legalized, and the legal guardians include not only family members but also public officers (17).

The legislation ensures community integration in Japan, Malaysia, Mongolia, and South Korea, while the rest in the region has community-based mental health care policies or programmes, except for Burnei and Laos (12).

## OVERVIEW OF MENTAL HEALTH SERVICES IN THE REGION

The number of psychiatrists and of psychiatric beds per 10,000 population are shown in Figure 1, except for East-Timor. Japan has the highest number of psychiatrists per 10,000 people in the region (9.4), followed by South Korea (3.5), Mongolia (3.3), and Singapore (2.3). Despite a recent decrease in admissions, Japan (28.4) has also the highest number of psychiatric beds, followed by South Korea (13.8). Mongolia also maintains a hospital-based care system with an occupancy rate of above 80% (18).

Non-governmental organizations (NGOs) have set up model mental health services, and trained both health care and non-health workers in post-conflict countries, such as Cambodia and East-Timor, where all mental health resources were destroyed (12,19,20). In Malaysia, local NGOs provide residential care, day-care services and psychosocial rehabilitation services in the community (18). In the Philippines, collaborative activities between local NGOs and university

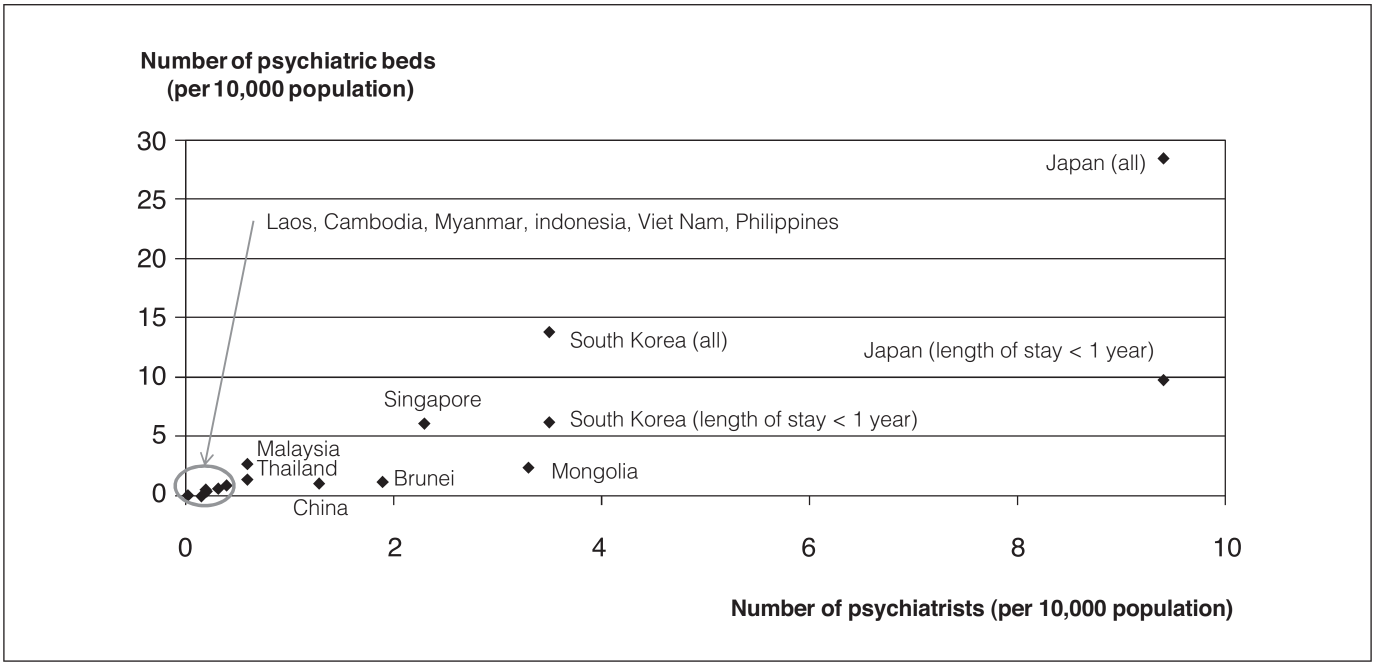

**Figure 1** Number of psychiatrists and psychiatric beds in countries of East and South East Asia
Sources: Jacob et al (11), World Health Organization (12)

groups compensate for the government's limitations (21). Most NGOs' activities cover screening and assessment, and talking treatments. Psychological, rather than Western-style phamacological treatment, is popular in these countries.

Home care and day hospital services are used as alternatives to hospital admission in several countries of the region. In Singapore, a mobile crisis team (community nurses assisted by a medical officer or a medical social worker) conducts home visits for crisis intervention, while community psychiatric nursing teams offer home care to discharged patients living in the community, including assessment and monitoring and psychological support to their caregivers (22).

In China, psychiatric hospitals send professionals to the homes of persons with severe mental disorders to provide "home-bed" services (23,24). For persons with chronic mental disorders, sheltered workshops for rehabilitation and a "rural guardianship network" for their supervision and management are also available, but their effectiveness is controversial (24,25). In China, non-government services such as private psychiatric clinics, non-professional counselling clinics, telephone hotlines, and folk treatments are becoming the dominant form of community mental health services, but their sustainability is of concern (15,26).

Most early intervention and assertive community treatments are provided in pilot specialized community mental health projects. In the Philippines, more than 7,000 patients were hospitalized in the mental hospital in Manila; however, the introduction of acute crisis intervention services reduced this number by more than half (27).

Japan, South Korea, Singapore and Malaysia have introduced assertive community treatment (ACT) with cultural modifications. A Japanese study in pre- and post-pilot phase reports the reduction of length of stay, while a subsequent randomized clinical trial shows a decrease of inpatient days and higher Client Evaluation of Services-8 (CSQ-8) scores in an ACT group compared to a control group (28). In South Korea, in a pre-post comparison, the number and duration of the admissions were also dramatically reduced and the clinical and social outcomes were significantly improved (29,30). In Singapore, the ACT programme was effective in reducing the frequency and duration of admissions in a clinical trial. The employment status of patients also showed improvement over the course of study (31).

Chronic beds for long-stay patients are being converted into residential facilities and group homes in communities, such as the private nursing homes of Malaysia (32).

In Malaysia and Thailand, community mental health promotion and prevention activities are conducted through public places, such as schools, churches, temples, and community halls (18).

Asia is vulnerable to natural disasters, including earthquakes and floods. These tragic disasters often deepen awareness of the need to develop community mental health systems. Mental health and psychosocial support are included in disaster preparedness in Indonesia (33), Myanmar (34) and Thailand (35). In Indonesia, a community mental health nursing training programme was developed after the Tsunami (36).

## OBSTACLES AND CHALLENGES

### Human rights

Traditional beliefs that mental illness is caused by malicious spirit possession or weak character persist in several countries of the region. According to a national survey in South Korea, people often consider mental illnesses to be self-limiting disorders that will resolve on their own (37). Much stigma is still attached to persons with mental illness, as well as to psychiatric institutions and services (22). One study in Singapore found that the main predictors of people seeking help were not availability and access to care but perceptions of mental illness and health care (38). Public misconceptions about mental illness result in prejudice which leads to discrimination. There is a gap between the legal framework and the reality of the mentally ill, who are often abused in many countries (39).

### Family involvement

Strong family involvement in mental health care is a characteristic of Asia (40). Family plays an essential role in the care of people with mental disorders in the community; however, the poor knowledge of mental illness and negative attitudes about the patient prevents many people in need from seeking care (40). Many persons with mental illness are abandoned by their families. The establishment of partnerships with families and the assignment of necessary resources are priorities in the region.

### Traditional healers

In many Asian countries, it is common for people to consult traditional healers for their health problems even if medical services are available. Healers rarely cooperate with each other, nor do they collectively work with formal health care providers (32). Cambodians often seek help from *Kru Khmer*, who are mainly herbalists (41), and it is also common to consult traditional healers in East-Timor (20). Families often bring the patient to religious healers first, although the government of Viet Nam prohibits this act (42). In Indonesia, up to 80% of people consult traditional healers as a first resort (43). The 1993 survey in Singapore shows 30% of patients in a national hospital visited traditional healers, *dukun*, before consulting physicians (44). Such behaviour is one of the reasons for the low formal service use in the region.

### Distribution of services and continuity of care

Mental health services are available only in certain areas of a country. Most people with severe mental disorders are unable to access services in low-resource countries, and mental health resources are centralized in large cities in medium-resource countries. In Japan and South Korea, policy proposals exist to convert current long-term psychiatric care beds to outpatient/ambulatory clinics or long-term community-based care, but in reality, many discharged patients have failed to make use of such services. A survey in South Korea shows a high readmission rate immediately after discharge (45), while one in Malaysia reports a lower rate of followed-up and treated patients at one year (46). South Korea is quickly developing a comprehensive mental health service system in each catchment area (47). In Japan, people lack an awareness of the "catchment area" due to the negative effects of the universal insurance system which is the greatest contribution to Japanese health (48).

### Funding

Most of the countries in the region are seeking to balance the public and private financing and provision of care. Funds for development of community services usually come from savings made from the reduction of beds in hospitals, but such cutbacks and increasing community services are not always balanced. Furthermore, in rapidly aging countries, community services are urgently needed for people with dementia. There is a concern that most of the mental health budgets will be spent on treating those with this disease. If the boundary between mental health and elderly care becomes unclear, a smaller amount of money will be earmarked for people with severe and persistent mental disorders.

## LESSONS LEARNED AND RECOMMENDATIONS

### Legal process and anti-stigma campaign

A legal process is needed to protect the human rights of persons with mental illness in countries without appropriate legislation. In Japan, the mental health act legally acknowledges for the first time that mental illness is a disability, and stricter criteria and a psychiatric review board for involuntary admissions have been established after a series of scandals regarding human rights violation (49). In the context of anti-stigma campaigns, renaming schizophrenia has been well accepted in Japan and Hong Kong (50,51). Similar movements are seen in other East Asian countries where Chinese characters are used.

### Integration into the general health system

The best way to create a cost-effective system is to utilize the existing general medical sector, providing training of primary health workers. Singapore has been successful in preparing general practitioners for providing mental health care, with psychiatrists' support (52). Primary care is generally more acceptable by persons with mental disorders and their families (52). Collaborative networks are needed among stakeholders to avoid fragmentation and must include service-users/families, hospitals, community health workers, NGOs, and traditional healers (53).

### Prioritization of target groups

Due to limited resources, we have to prioritize care. Compared to depression or mild mental disorders, which are generally more accepted and better funded, persons with severe and persistent mental disorders are often missed and left behind in planning and budgeting. Prioritized services should be provided to severely disabled persons.

### Leadership and policy making

Strong leadership is needed to navigate changes. Very few mental health professionals are actively involved in policy-making. Consequently, the lack of leadership allows the allocation of more money or resources to general health care services rather than to mental health. It is not uncommon that non-mental health professionals have negative attitudes toward mental illness. It is necessary to change their ways of thinking.

Not only central but also local governments need to participate in the development of sustainable community mental health care systems. In recent times, former patients have more opportunities to speak publicly and participate in mental health policy making (54).

### Funding and economic incentives

The overall mental health budget should be increased. Financial insecurity keeps persons with mental illness and their families from seeking medical services. It is essential to develop a funding system in which all people who need help are able to receive care.

Economic incentives are necessary to promote community-based mental care services. Hospitals and mental health professionals are reluctant to shift to the community because of poorer funding and lower salaries (24). Transitional costs may be necessary for retraining mental health workers. ACT and employment support are not fully covered by medical expenditures. A flexible financial structure over medical and social boundaries is required.

## CONCLUSIONS

After a long history of asylum, a slow deinstitutionalization is occurring in East and Southeast Asia. Now this region is in a transition period from institutional to community care. Unlike the West, Asian countries fear the confusion engendered by rapid change; they are cautiously reducing psychiatric beds, and simultaneously trying to build community services. This attempt has not yet been successful, mainly because of system fragmentation. Role differentiation is required between the hospitals and community services, and the public and private services. Ensuring the quality of care is the next challenge for community mental health care. We can learn lessons from other regions in constructing the future of mental health care in East and South Asia.

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*MENTAL HEALTH POLICY PAPER*

# Lessons learned in developing community mental health care in Latin American and Caribbean countries

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*This paper summarizes the findings for the Latin American and Caribbean countries of the WPA Task Force on Steps, Obstacles and Mistakes to Avoid in the Implementation of Community Mental Health Care. It presents an overview of the provision of mental health services in the region; describes key experiences in Argentina, Belize, Brazil, Chile, Cuba, Jamaica and Mexico; and discusses the lessons learned in developing community mental health care.*

**Key words:** Community mental health care, Latin America, Carabbean countries, mental health policies, key experiences, lessons learned

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This paper is the sixth of a series describing the development of community mental health care in regions around the world (see 1-5), produced by a Task Force appointed by the WPA as part of the its Action Plan 2008-2011 (6,7). The WPA Guidance on Steps, Obstacles and Mistakes to Avoid in the Implementation of Community Mental Health Care, developed by this Task Force, has been previously published in the journal (8). In this article, we describe these issues in relation to Latin American and Caribbean countries.

The Latin America and Caribbean (LAC) region is comprised by 34 countries, with a population of approximately 600 million inhabitants, mostly living in urban areas, with a vast ethnic diversity mainly composed of Amerindians, Mestizos, Whites and Blacks. Although 44% are middle-income and 35% are upper-middle income countries, economic inequality is high, and near one-third of the population live below the poverty level (9). The one-year prevalence of mental disorders varies from 20 to 25%, with a predominance of alcohol dependence (5.7%), depression (4.9%) and generalized anxiety disorder (3.4%) (10). Over the past decade, most LAC countries have experienced economic and scientific growth (11,12), political shift from dictatorial to democratic regimes (13), civil rights movements, and implementation of national health policies leading to an increase in life expectancy and a reduction in infant mortality (8).

## MENTAL HEALTH POLICIES AND KEY EXPERIENCES

In 2001, 70% of LAC countries had a mental health policy, and only 10% had a specific legislation for mental health (14,15). In addition, 50% had a rate of psychiatrists lower than 2,0 per 100,00 inhabitants, 70% had less than 20% of psychiatric beds in general hospitals, 30% did not provide essential psychotropics, and most of the countries allocated less than 2% of the health budget to mental health. Treatment coverage is limited, and the majority of countries still centralize mental health activities in psychiatric hospitals (15).

The Declaration of Caracas was the cornerstone to trigger psychiatric reform in LAC countries (16-18). The guiding principles of the Declaration were to protect human rights, to promote mental health care within the primary health system, to transfer inpatient psychiatric care from mental hospitals to general hospitals, and to build up a community network of options of care for people with mental disorders. These principles did stimulate the shift from hospital-based to community care (15,17), and since then, a new model of mental health care has been heterogeneously implemented according to local policies and financial resources (16,18). Some progress in integrating mental health to community care has been observed in countries like Argentina, Brazil, Belize, Chile, Cuba, El Salvador, Guatemala, Jamaica, Mexico, Nicaragua and Panama (19,20). We selected eleven key experiences, which are summarized as follows.

### Argentina: the Rio Negro experience

Rio Negro, a state in the Patagonia region in the South of Argentina, with a population of 600,000 inhabitants, was the region where changes in mental health services advanced most in Argentina. This occurred especially after the approval of law 2440, in which treatment and rehabilitation were guaranteed for all people with mental disorders. The psychiatric hospital was closed and replaced by psychiatric beds in general hospitals and halfway houses. Mental health teams are now based in local general hospitals and provide supervision and care to patients referred from primary care (21). A course focusing on mental health services has been set up and a residency program in community mental health care aids the recruitment of mental health professionals.

### Argentina: the Neuquén experience

The Neuquén Province is situated in Patagonia, with 350,000 inhabitants. Health reform was initiated in 1970, and this province led the development of community health care systems in LAC countries. The province is divided into 6 zones, with different levels of health care complexity. In rural areas, the first contact is made either with traditional healers or general practitioners, who act under specialist supervision. The public system operates with 10 psychiatric beds in a general hospital and one detoxification unit. In 1995, a non-governmental organization (NGO) launched the AUSTRAL rehabilitation program, which offers one-month to one-year training for primary care physicians and mental health professionals.

### Belize

Belize is a lower-middle income country, located in Central America with a population of 270,000 inhabitants (20,22). The health system is comprised of 37 primary health centres, 3 polyclinics, 2 outpatient mental health services, 4 psychiatric beds in a general hospital ward, and 8 general public hospitals (20). A program for training psychiatric nurses was launched with technical support provided by Pan American Health Organization (PAHO). The nurses are supervised by the two psychiatrists available in the country and they participate in the admission and discharge of patients, review side effects of medication, and perform psychotherapy. They communicate with schools, organize activities for the patients and provide home care in rural areas.

### Brazil: the Sobral experience

Sobral is a city of Ceara, a State in the Northeast of Brazil, with 175,000 inhabitants. There are two specialized community mental health centres, one psychiatric emergency unit, one residential care facility (sheltered home) and primary health centres with health family programs. These programs are run by medical doctors and other health professionals. Patients with mental disorders are screened and treated by general practitioners, and the severe cases are referred to mental health teams. Moreover, specialists provide continuous supervision to general practitioners (23).

### Brazil: the experience of Campinas

Campinas is a city located in the State of Sao Paulo, comprising approximately 1 million of inhabitants. In 1990, the mental hospital was remodelled, and new services were created: a crisis unit, a chemical dependency unit, outpatient unites and a social and cultural centre. The mental health system is now comprised of six 24-hr specialized mental health community centres, with 32 psychiatric beds (24). These services provide care for people with moderate and severe mental disorders. In addition, mental health teams provide support and technical supervision for health professionals in primary care (25). Thirty mental health residential facilities cover 150 long-stay patients discharged from the psychiatric hospital.

### Brazil: the experience of Belo Horizonte

Belo Horizonte is a city in the State of Minas Gerais, with a population of 2,5 million inhabitants. There are 7 specialized community mental health centers including emergency care, and 8 primary health care centres (26,27). The community mental health centres were conceived to deal with severe cases that used to be referred to the psychiatric hospital.

### Brazil: the experience of Santos

Santos is the biggest port of Latin America, situated in the State of Sao Paulo, with approximately 420,000 inhabitants. Psychiatric reform started 20 years ago. The main psychiatric hospital of the city was closed and community mental health services were implemented (28,29). In 2005, some important actions helped foster mental health systems: investments in developing community mental health units; an increase in the number of mental health workers; training in mental health for health professionals; and the implementation of the Return Home Program (benefits for psychiatric patients who leave hospitals). Currently, there are 5 community mental health centres and 6 outpatient mental health services. Twenty-five psychiatric beds are provided in community centres and in the general hospital. There are 13 mental health teams working in primary health centres. There are no residential facilities for patients post-discharge and psychiatric beds are insufficient to cover needs for acute cases, meaning that some psychiatric hospitalization takes place far away from the city.

### Chile

The population of Chile is 16 million inhabitants. The Chilean reform was triggered in 1993, when group homes were established for newly deinstitutionalized populations, and mental health programs were developed in day hospitals. In 1997, a mental health plan was developed by the Ministry of Health, based on priorities set up by epidemiological studies (30). Afterwards, the impact of a trial showing that depression can be treated in a large low cost scale (31) led the government to set up a plan to treat depression on a national basis. As part of the Chilean Health Reform, depression was included in the Regime of Health Guarantees, providing financial cover and treatment for 56 priority diseases (32). The main component of the depression program was to incorporate mental health teams in primary care, performing standardized diagnosis, promoting education for patients and families, delivering psychosocial sessions mainly to moderate and mild cases, using antidepressants in the severe cases, and monitoring and evaluating the feasibility and effectiveness of the program (33).

Nowadays, the mental health system is based primarily in primary care and general hospitals, though including psychiatric specialized teams and psychiatric hospitals (32,33). Ambulatory mental health centres are often attached to general hospitals, and there are many group homes for deinstitutionalized and mentally ill across the country (33).

### Cuba

The population of Cuba is 11 million inhabitants. The Caracas Declaration and the Havana Charter in 1995 both contributed to reorient the mental health system (34,35). Community centers were designed to coordinate, organize, and train human resources in mental health all over the country, which contributed to increased coverage of the population (about 1 centre to 30,000 people) (36). The system operates at three levels of care: the primary level, comprised of community mental health centers, mental health teams in polyclinics and family doctors; psychiatric services in general hospitals where there are crisis intervention teams; and psychiatric hospitals.

### Jamaica

The population of Jamaica is around 2.7 million inhabitants. The health services are organized by regions. General hospital wards are used to treat acute cases, offering 24-hr emergency attendance. Outpatient clinics are run by psychiatrists and mental health officers (MHOs), who are specialized trained nurse practitioners, exposed to knowledge in community psychiatry, psychology, social work, psychopharmacology, and patient management. The MHOs provide crisis management, home treatment, and assertive outreach care, being authorized by an act of mental health law to perform detention whenever needed. MHOs see patients in primary care and outpatient clinics. Medication is initiated in collaboration with a primary care doctor, and severe and more complex cases are referred to psychiatrists (37,38).

### Mexico: the Hidalgo experience

The Hidalgo experience relates to the shut down of the Ocaranza Asylum in the year 2000. This asylum was located in the Hidalgo State, a central region of Mexico with a population of 2.5 million inhabitants. Two NGOs, the Mental Disability Rights International, and the Mexican Foundation for the Rehabilitation of the Mentally Ill, and civilian activists had a crucial role in triggering the reform process, by denouncing the extreme situation and human rights violations in psychiatric institutions. The asylum was replaced by 10 villas which were built as residential alternatives, plus a 30 bed acute psychiatric ward with a 24-hr emergency department (39).

## LESSONS LEARNED

As shown in the previous section, many innovative initiatives are taking place in the region (40). The number of psychiatric beds in custodial hospitals is declining; there has been a modest increase of psychiatric units in general hospitals; and mental health care is slowly becoming an integral component of primary health care. However, the overall picture is mixed: in most countries very few community-based services are available, particularly for the young and the elderly, and the capacity to monitor and evaluate services and programs remains insufficient.

The experience of Chile documents the power of well-conducted trials to influence policy. It was, in fact, the paper published in the Lancet by Araya et al (31) which led to the impressive nationwide expansion of treatment of depression in primary care.

The Rio Negro and Hidalgo state experiences show that a system which is successful in a given region may serve as a model for expanding community care to the entire country.

Several key experiences document the importance of involvement of psychiatric nurses in community mental health care. In Belize, the success of the inclusion of psychiatric nurses was mainly due to the high level of training in mental health offered to these professionals, the close supervision by psychiatrists, and they fact that they work using standardized protocols and guidelines. In Jamaica, well-trained nurses were the cornerstone of integrating mental health care in the health system. In Rio Negro, psychiatric nurses were effective in decreasing resistance from health professionals to treating people with mental disorders and in educating families and the community about mental health care.

Partnership with NGOs, private institutions and other international agencies were essential in triggering psychiatric reform in Mexico (Hidalgo experience), through advocating for the human rights of people with mental disorders. Denouncing human rights violations has also triggered the closure of psychiatric hospitals in Brazil (Santos and Sobral). As shown by the Mexican experience, it is crucial to have all the involved parties together to develop a plan of action.

## CONCLUSIONS

Reform means to protect the human rights of patients, to provide the best available treatments, to treat severe cases in the community, and to use the least restrictive possible modalities of care. However, it is noteworthy that no mental health system can function with insufficient beds for acute admissions. Where less acute beds than needed were available, as in the Santos case, it was necessary to transfer acute cases to other cities, causing unnecessary suffering to patients and their families. A crucial problem is represented by the scarcity of human resources, particularly psychiatrists and specialized nurses, which leads to an overload of work for mental health professionals, representing in some countries a powerful factor leading to brain drain. The example of Chile, where mental health programs were based on scientific data, should be taken into account especially by countries with more financial resources, like Brazil, Argentina and Mexico.

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# Mobile technologies in psychiatry: providing new perspectives from biology to culture

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The revolution in mobile technologies has come to psychiatry, as it has to diverse other health care domains (1). It has permitted scientists and clinicians not only to recognize the mechanisms of psychopathology for "most people" with a given disorder, but also to better understand the individual in his or her specificity. In this way, mobile technologies have permitted the field to come full circle and to ask empirical questions that have traditionally been limited to qualitative case studies.

Mobile technologies also have their limitations but, when combined with classic methods in psychiatry, they provide new and powerful opportunities for both research and treatment.

We present here a brief overview of the use of mobile technologies in psychiatry, including its history, validity and applications for understanding the role of diverse constructs from biology to culture.

## HISTORY OF MOBILE TECHNOLOGIES IN PSYCHIATRY

The research methods most commonly used in psychiatry are confronted by two major barriers that impede direct tests of theories of etiology and hinder knowledge of underlying mechanisms.

The first barrier concerns the very brief time periods in which many pathological phenomena express themselves. Examples of such rapidly fluctuating phenomena include the association of stress and mood, craving and substance use, cognition and specific behaviors, and many other topics that are central to modern theories of mental disorders. These associations are limited to periods ranging from seconds to hours, but they are paradoxically studied most frequently over periods of weeks, months or years through the use of retrospective questionnaires and assessments of the "general" status of patients.

While laboratory research protocols may overcome some of these temporal barriers, a second major constraint concerns the limited ecological validity of the data collected by traditional methods. It is often impossible to confirm that behaviors or psychological states observed in hospital settings or induced by laboratory protocols reflect the phenomenon of interest as it would occur naturally.

Ambulatory monitoring provides a partial solution to both barriers by permitting the repeated assessment of behavior, emotion and other experiences at numerous times throughout the day and in the natural contexts of daily life.

Despite its apparent novelty, ambulatory monitoring has been used in the field of mental health for over three decades. The initial work of Larson and Csikszentmihalyi (2) used the term "experience sampling method" to refer to the collection of information on the experiences of individuals within the flow of daily life. This ambulatory methodology was soon after applied to psychiatry by a prolific team of Dutch researchers (3), and increasingly used by research groups around the world.

Most studies conducted in this earlier period used paper-based methods where individuals would complete a questionnaire concerning their experiences or activities following a signal generated by a pre-programmed wristwatch or beeper. However, paper-based methods have been progressively replaced by computerized assessments that use mobile electronic devices (e.g., personal digital assistant micro-computers or smartphones). This electronic approach is particularly characteristic of ecological momentary assessment (4), an ambulatory monitoring technique for the assessment of variables in real time and in natural settings. A principal benefit of electronic mobile assessments over paper-based methods is their ability to verify the timing of data collection, and thereby provide prerequisite information for conclusions of causality or for understanding the direction of association among correlated variables.

## MOBILE TECHNOLOGY RESEARCH PROTOCOLS AND THEIR VALIDITY

Mobile technologies permit flexibility in their applications and much variation has been seen in the design of studies. As a common rule, the repeated measures approach requires that each electronic interview should be limited to a few minutes in order to reduce patient burden. However, even very brief electronic interviews typically permit the assessment of dozens of variables, and the use of gated questions provides highly efficient interviews as new questions are asked only when pertinent and as a function of the initial responses of participants.

The actual number of observations per day depends on the nature of variables being examined, their expected duration, and the scientific questions at hand. For example, time-budget surveys that attempt to assess the natural frequency of discrete behaviors may use 10 or more assessments per day, whereas the study of more stable variables may require only two or three assessments. The interviews administered to patients may occur at fixed or random time intervals depending on study objectives, and may be "signal-based" (where the researcher determines the moment of data collection) and/or "event-based" (where the participant decides the moment to respond according to the occurrence of a particular event or experience).

Concerning the number of days of mobile assessment, the most commonly used time span is one week, which allows researchers to assess variables over the usual pattern of work and leisure days. Again, considerable variation has been observed in the length of studies, ranging from one day to several weeks depending on the goals of the particular study.

The validity of mobile technology protocols has been examined in diverse psychiatric populations. Table 1 presents a summary of highly similar research studies (5,6) that have included non-clinical controls, as well as patients with anxiety disorders, mood disorders, schizophrenia, and substance dependence. Excellent compliance rates have been observed across these populations with a negligible loss of materials.

Despite concerns that the repeated assessment methodology may become cumbersome for patients and that they may increasingly miss electronic interviews over the course of the study, no such fatigue effects have been observed. By contrast, patients demonstrate that they become increasingly familiar with the assessment device and require less time to complete the electronic interviews over the course of the study.

## ILLUSTRATIONS OF MOBILE TECHNOLOGY RESEARCH

Mobile technologies have been extensively used to investigate the role of psychological variables, such as subjective reports of emotional states, behavior, perceived stress and other experiences. However, the data collected also provide new insights into the role of a large diversity of constructs that traditionally apply very different methods.

A first illustration concerns the role of biological markers found to be associated with a given disorder. For example, while specific biological and genetic markers may be more frequent among family members of alcohol-dependent individuals, the manner in which they may increase individual vulnerability to this disorder remains unclear. In a study using mobile technologies to examine the association of emotions and alcohol use, anxiety was found to predict the use of alcohol in subsequent hours of the same day, and a decrease in anxiety symptoms was observed when alcohol was eventually consumed (7). Importantly, this "self-medication" effect varied significantly as a function of whether the individual had a family history of alcoholism. That is, individuals with a positive family history needed a greater dose of alcohol to obtain the same "anxiolytic" effects as individuals without a family history of this disorder. Such applications of mobile technologies may therefore inform us as to the potential mechanisms through which biological or heritable factors lead to increased vulnerability. In the same way, recent research has combined mobile technology data with magnetic resonance imaging findings in order to understand the full significance of brain markers for depression (8). The combination of these state-of-the-art methods allows clinical research to be linked with daily life experience in a manner that is not possible using traditional research techniques.

At the other end of the spectrum, the roles of societal or cultural factors in mental disorders are also increasingly examined using mobile technologies. Previous studies using these methods have demonstrated the specific characteristics of subgroups within a given society, such as by gender or ethnicity (9), and other research has also examined the influence of cultural variation in geographically distinct locations. For example, Grondin et al (10) tested a cognitive theory of depression in cities that varied by individualistic or collectivist cultural histories. They found important differences across sites, and as a function of specific markers of cultural investment. Such results may reflect differences in the value attributed to social or achievement-oriented events in these cultures, thereby affecting the validity of a highly influential theory when generalized to different populations. In the same way, the role of cultural influences can be examined using mobile technologies relative to a wide range of daily life activities, interactions and cognitions, in order to understand the specificity of different populations and subgroups.

**Table 1** Feasibility and validity of mobile technology research in psychiatry

| Variable | Controls (n=280)[a] | Anxiety disorders (n=45)[a] | Mood disorders (n=41)[b] | Substance dependence (n=85)[a] | Schizophrenia (n=47)[a] |
|---|---|---|---|---|---|
| Compliance (%) | 83 | 73 | 86 | 80 | 69 |
| Loss of materials (%) | 2 | 0 | 0 | 0 | 2 |
| Duration (min) | 2.9 | 4.2 | 4.5 | 2.9 | 3.6 |
| Fatigue effects (γ±SE) | 0.03±0.03 | 0.02±0.05 | 0.01±0.03 | 0.03±0.03 | -0.04±0.05 |
| Training effects (γ±SE) | -0.18±0.03* | -0.28±0.05* | -0.12±0.20* | -0.13±0.03* | 0.31±0.04* |

[a]Johnson et al (5) ; [b]Husky et al (6) ; *p < 0.01

## CONCLUSION

The use of mobile technologies in psychiatry has provided new insights to understanding the etiology and expression of mental disorders. It has been shown to be feasible and valid for a wide range of psychiatric disorders and its cost renders it increasingly accessible to researchers around the world. Like all approaches, mobile technology methods also have their limitations, but their combination with traditional research paradigms allows for a more complete understanding of the patient in his or her specificity.

This methodology is also certain to provide new and more effective means of treatment in the years to come, including personalizing interventions with the capacity to encourage patients in real-time to perform exercises or to apply prescribed treatments as they should ideally be followed in their daily lives.

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PERSPECTIVE

# Promises and limitations of telepsychiatry in rural adult mental health care

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Pioneers in telemedicine demonstrated as early as in the 1960s the effectiveness and acceptance of mental health administration, education and clinical treatment through the electronic medium. Two-way television was conducted in black and white, with limited audio fidelity and often on fairly small video screens. Furthermore, it was expensive. None the less, these early pioneers designed experiments to address the main problem of the time, access to quality health care.

The focus of research at Dartmouth Medical School was providing care, via collaboration with local primary care and psychologists, to seriously mentally ill persons in their own community rather than transporting them to a hospital 27 miles away (1). The use of two-way television and the outcomes of the research were successful. C. Wittson (2,3), along with his research into individual and group therapies by two-way television, also demonstrated that expertise in the form of administrative oversight, psychiatric education and supervision could be transported via electronic means to distant sites. Again, it was expensive. We did not yet have cost effective technology to expand beyond research. By 1973, however, we did have a name for psychiatric care via two-way interactive television: telepsychiatry (4).

Advances in technology in the 1980s and early 1990s led to a reduction in telemedicine costs and provided many with visions of a revolution in health care delivery. We could see the potential of reaching out to patients on a regular basis to provide specialty care that was not available or had limited availability in distant communities. Telepsychiatry also offered choice to small communities, an aspect of the access problem that is rarely emphasized.

Large color monitors, updated at 30 frames per second with barely perceptible lag time, continued to melt away the distance between care giver and receiver. Telepsychiatry was now affordable to health care organizations (5). The American Telemedicine Association was established (6). Clinical champions began to share success stories at conferences, and case reports appeared with more frequency in the general medical literature as well as telemedicine specific journals.

By the mid 2000s, the costs of feature packed standalone encrypted videoconferencing units and videoconferencing client software hit its nadir. Coupled with advances in high speed telecommunications capacity using the Internet, its low relative costs and the Internet's growing accessibility, a revolution was certainly at hand. Unfortunately, despite more practitioners, health care applications and supporters of telemedicine, its incorporation into the day to day practice of health care did not materialize.

We had not done enough to educate our colleagues, health care or government leaders. Health care facilities were and continue to wrestle with the investment opportunity costs. Even academic psychiatry departments are slow to redistribute resources, including psychiatry residents in training, from traditional roles to ones involving significant use of technology (7). Acceptance of technology depends to a large extent on perceived usefulness and ease of use (8).

Practicing from a distance also requires significant administrative support in record maintenance, dispatching prescriptions, and coordinating schedules, while information technology departments are guarding their networks so tight that needed electronic health information often does not flow across the firewall. Today, transversal units and parallel video networks are solving some of the anxieties of health information technology engineers and managers. However, incorporation of electronic health records and electronic prescriptions, truly needed to imbed telepsychiatry seamlessly into everyday practice, is only slowly penetrating the health care market in many countries (9-11).

Naturalistically, telepsychiatry developed where the need and advocacy were greatest, i.e. rural and frontier areas. In the United States, for example, early leaders in clinical and regulatory adoption were states with small pockets of population spread over vast geographical areas. These communities were not large enough to support the practices of specialty or subspecialty medical providers. Collectively, however, these groups of small populations were statistically similar to suburban or urban populations in epidemiology of mental illness. Telepsychiatry clinical champions, along with local and regional political and government leaders, became advocates, and funding for many rural and frontier telepsychiatry pilot projects began. Due to its unique adaptability to an audio visual medium, psychiatry quickly became a leader in the telemedicine field.

Telepsychiatry has established itself as a viable health care delivery modality. It has been the first in telemedicine to look at itself in a comprehensive and evidence based manner (12). Psychiatric evaluations, medication management, and cognitive behavioral therapies have sufficient evidence to be considered fully equivalent to in-person treatment.

Nuances in telepsychiatry and their potential applications are an area that needs additional research. Anecdotal reports of patients with eating or post-traumatic stress disorders divulging more information in telepsychiatry than in in-person sessions need to be carefully assessed (13,14). It may be easy to overlook the potential risks for patients in divulging information too quickly, before they know what to do with their emotions related to repressed thoughts. Are telepsychiatrists aware of these possible phenomena, so they can recognize and assist the patient in managing this cathartic information safely? These are questions for all of telepsychiatry, not just rural health care delivery.

Telepsychiatry redistributes resources, but does not necessarily create them. Telepsychiatry programs within organizations and academic centers start out very successful with clinical champions, usually providers, quickly establishing clinical practices themselves or with a colleague. Clinical time, however, is rapidly saturated. Recruiting additional providers to serve rural areas, full or part-time, puts them in competition with existing organizational psychiatry resources. Additionally, unless the leadership in the organization or government is committed to the prospects of changing the way they deliver mental health care and reallocating resources, they are doomed to limited success at best.

It is paramount that rural partners appreciate the limitations in psychiatric resources and, like their urban telepsychiatrists, are willing to look at new ways of mental health care delivery and collaboration (15,16). Rural clinics may consider bartering with other rural clinics or providers for services. For example, if one clinic has a therapist with eating disorder experience, they may barter that therapist's time for time from a general psychiatrist in another rural clinic. Rural clinics should consider forming mental health cooperatives where limited resources can be exchanged, resulting not in more resources, but more effective use of existing resources and subsequent gains in beneficial outcomes and efficiency.

There are several applications of telepsychiatry that are particularly suited for rural populations. One of these is group therapy. This may be the ideal treatment for some illnesses that already bring isolation or that require interpersonal interaction to identify and change unhealthy interpersonal behaviors (17,18). The challenge with group therapy, even in urban and suburban areas, is reaching the critical mass of patients needed for the group to be successful. Telepsychiatry can bring small numbers of patients together from several locations; usually 3-4 sites can interact on an appropriately sized monitor in one multipoint meeting.

Telepsychiatry can also provide relief to rural inpatient as well as outpatient psychiatrists (19). Time can be used for vacations, respite, and training. Telepsychiatry also allows for subspecialty consultation for both inpatients and outpatients to rural community hospitals. It reduces isolation and provides collegiality and support.

Since telepsychiatry results in a redistribution of resources, it is particularly important for cultural awareness to be at the forefront of this delivery modality (20). Telepsychiatry provides a great alternative to accessing culturally competent psychiatrists for particular communities or particular patients (21,22). For example, Deaf Addictions, School of Medicine, University of Maryland has reached out to rural areas of the state with culturally competent, signing addiction counselors. Using videoconferencing and their knowledge and experience in the culture, these counselors are able to communicate in real time with deaf and hearing impaired clients, a significant improvement over typing or video relay (interpreter). If culturally and linguistically competent providers are not available, then culturally competent medical interpreters via videoconferencing can still provide a significant improvement in communication and care to isolated rural populations.

I see much promise for telepsychiatry in rural areas, provided we are delivering what is needed by our patients. For me, the gift of time is the critical healing factor in the therapeutic relationship whether in person or via technology. A patient's "thank you for your time" is a profound statement and it can transcend technology. Some patients will need little of this factor, while others will need more. Electronic mail, instant messaging and texting also require a gift of time and may be cost effective alternatives to more expensive and technology dependent interactive video conferencing.

By looking at our telepsychiatry history, it is easy to see how the limitations to telepsychiatry continue to diminish. Technology has solved many issues, while mental health providers have looked to adaption and nuances to identify telepsychiatry's niche in health care delivery and care.

Telepsychiatry is fluid, adaptable and titratable, and its only limitations are in the mind of the user.

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**LETTER TO THE EDITOR**

# The bereavement exclusion may not be applicable in real world settings

We thank Wakefield and First for citing three of our papers in their review article about the validity of the bereavement exclusion to major depression (1). However, we believe that their view about our work is incomplete and misleading.

First, they argue that no special training or checklist was used in our studies. This point is not correct, as clarified in our first paper (2) ("The MDE module of the Mini-International Neuropsychiatric Inventory (MINI) structured interview was used"), in the second (3) ("Doctors had a prestudy training session about DSM-IV MDE criteria, including the bereavement exclusion criterion. Moreover, they had to assess each MDE criterion (yes/no) to check the diagnosis of MDE") and in the third (4) ("Clinicians, who were trained about the DSM-IV MDE criteria prior to the study, were asked to check each DSM-IV MDE diagnosis criterion").

Second, they argue that the bereavement exclusion was inaccurately applied in our studies. Their view might be more dogmatic than pragmatic. Actually, our results from two different samples including 4,252 clinicians and 30,603 patients (2-4) show that the bereavement exclusion criterion has a poor discriminant validity in treatment seeking individuals. Indeed, there are two possible explanations for these results. The first is that the bereavement exclusion was not applied correctly by the trained physicians involved in the studies. The second, much more plausible, is that the bereavement exclusion is actually not applicable in real world settings, due to its complexity.

Thus, we conclude that the bereavement exclusion criterion is not discriminant in real world settings, and that further studies with a design similar to ours are needed to confirm our data. Finally, we think that the bereavement exclusion has to be reconsidered, even possibly deleted, in the DSM-5 definition of major depressive episode.

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# Was the bereavement exclusion originally based on scientific data?

Wakefield and First's paper published in the February 2012 issue of *World Psychiatry* (1) provides a useful review of the debate concerning the DSM-IV bereavement exclusion. I am also pleased to see the authors' helpful suggestion that a past history of major depression ought to be considered in our discrimination between ordinary bereavement and major depressive disorder.

However, the authors' central argument seems predicated on the premise that there is insufficient evidence to "invalidate" the current DSM bereavement exclusion; i.e., "…the claimed evidence for the bereavement exclusion's invalidity does not exist". But, in my view, this argument does not address the relevant foundational question, namely, "Was the bereavement exclusion *originally* based on sound, scientific data?". If not, it is arguably not the burden of DSM's critics to "invalidate" the present bereavement exclusion. On the contrary, the burden of proof should fall on those who believe the bereavement exclusion should be *retained*, absent a firm scientific basis for adopting it in the first place.

To put the matter in more general terms, it is a rudimentary principle of logic and science that the members of a subgroup within a given category share the general features of the category as a whole, unless there is proof to the contrary. So, for example, given the valid claim "The average U.S. citizen has a life expectancy at birth of 78 years", the counterclaim "But this does not apply to any citizens of Wisconsin" cannot stand, *absent corroborative empirical evidence from Wisconsin*. By analogy, if an individual meets the general symptom and duration criteria for major depressive disorder, the claim that he or she should be *excluded* from the major depressive disorder category based on recent bereavement must rest on a convincing demonstration that such individuals differ in important respects from other members of the major depressive disorder category. But this demonstration would require the kind of rigorous, controlled, prospective studies of *clinical samples* that, alas, have never been done. Moreover, in my view, the "exclusion" cannot rest merely on retrospective data (subject to recall bias) from epidemiologic surveys of the general population, such as those extracted from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) community sample.

The seminal studies from Paula Clayton in the 1970s – the foundation and genesis of our present-day bereavement exclusion – did not meet the requisite design specifications. For example, Clayton's studies did not compare large samples of bereaved vs. non-bereaved major depressive disorder patients – matched for age, gender, depression severity, and baseline symptoms – and follow these subjects for several years, in order to assess differences in morbidity, mortality, vocational impairment, number of hospital admissions, number of suicides, etc. Hence, *the scientific basis for the bereavement exclusion was never present in the first place*. To argue that we are now wedded to the bereavement exclusion construct because it has not been fully "invalidated" is to put the scientific cart before the horse. Defending the bereavement exclusion on that basis does no service to the scientific method, or – more important – to the care of our depressed, bereaved patients (2).

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**RESPONSE**

# Fallacious reasoning in the argument to eliminate the major depression bereavement exclusion in DSM-5

We thank E. Corruble and R. Pies for their comments on our review of the evidence pertaining to the validity of the DSM's major depression (MDD) bereavement exclusion (BE) (1).

Regarding the former letter, as our review explained, Corruble's studies (2-4) provide no evidence regarding the BE's validity, because the BE was misapplied. This conclusion is not "dogmatic", but based on Corruble's data.

After interviewing depressed patients, physicians in Corruble's studies marked each MDD symptom and criterion "yes" or "no" on a questionnaire. Criterion E (the BE) for MDD requires that, if the depressive episode occurs during bereavement, it must have one or more of certain features that are uncharacteristic of normal grief (i.e., psychomotor retardation, feelings of worthlessness, suicidal ideation, marked impairment, psychotic ideation, or duration greater than 2 months) showing that it is better explained as MDD than as normal bereavement. Thus, a "yes" rating on criterion E indicated that the episode was a *bona fide* case of MDD, whereas a "no" rating meant that the episode was placed in Corruble's "excluded" sample. However, the vast majority of physicians who checked "no" to criterion E also checked "yes" to either "psychomotor retardation" (70.6%), "suicidal ideation" (36.0%), or "feelings of worthlessness" (66.8%). Yet, criterion E requires that these symptoms not be present for a case to be excluded, so the "no" rating for criterion E was logically inconsistent with the "yes" on the symptom ratings. If the BE had been applied correctly, these symptoms' rates would necessarily have been 0% among the excluded cases. In essence, the symptom profile served as a validity check on the physicians' application of the BE, and revealed its invalidity.

We speculated that lack of training contributed to the physicians' incorrect application of the BE. Corruble objects that the physicians did receive some preparation. The fact that they still got confused suggests that the BE's double-negative wording requires simplification, and we proposed such a simplification in our review. But this does not change the fact that the physicians applied the BE incorrectly.

Corruble suggests that there are two possible explanations for the contradictory results – either the physicians incorrectly applied the BE, or the BE is so complex that it cannot be correctly applied in real world settings. However, *both* these "explanations" imply that criterion E was not applied correctly, supporting our conclusion.

Attempting to elevate her physicians' errors into a general condemnation of the BE, Corruble asserts the BE is so complex that it is incapable of real-world application. However, although confusingly worded, the BE ultimately relies on duration, impairment, and symptom criteria – the same kind found in most DSM diagnostic criteria sets. Physicians who initially misapply the BE generally learn to apply it correctly with further training, and lay interviewers have applied the BE successfully in research studies. Moreover, physicians have a similar trajectory in learning to diagnose depression in general, with more incorrect than correct diagnoses initially, so the BE's diagnostic learning curve is not unique (5).

Corruble's publications misleadingly suggest that her studies reveal the surprising severity of BE-excluded episodes, rather than explaining that her "excluded" sample would not be excluded by the BE. For example, in her letter, Corruble states that "our results… show that the bereavement exclusion criterion has a poor discriminant validity…". However, the results show nothing about the BE's discriminant validity, because the criterion was not properly applied. Recent recurrence studies described in our review strongly support the BE's discriminant validity.

Corruble asks elsewhere "Should the E criterion for the diagnosis of MDE be retained?... Or should it be deleted?" and answers "Unfortunately, our data cannot answer these questions" (6). Our review explains why we strongly agree with this conclusion.

Regarding Pies' letter, he argued in recent papers that the available evidence supports the invalidity of the BE (7,8). Our review shows that the evidence Pies cited offers no such support.

Pies now claims that no evidence is needed to eliminate the BE, because there was no adequate evidence for having included it in the first place. However, the procedures established for revising the DSM sensibly require that changes be justified by evidence (9). If one generally adopted Pies' proposed standard for the BE that there must be methodologically perfect studies to justify retention of a criterion, then much of the DSM would have to be thrown out along with the BE. Yet in many cases, including the BE, there are good reasons anchored in medical observation and relevant but less-than-perfect evidence allowing a plausible judgment of a condition's likely status, pending further evidence. Pies' own standard when arguing for eliminating the BE was the "best available evidence" or the "preponderance of evidence" despite "the limited data we have" (7,8).

Pies summarily dismisses Clayton's (10,11) pre-DSM-III prospective studies of grief as justification for the BE's introduction. However, whatever their limitations, those studies provided crucial and still-persuasive evidence that some MDD symptoms are also common in normal grief, and that the BE is necessary to avoid massive false positives. Recent studies confirm Clayton's early conclusions (see below).

Pies claims that "the burden of proof should fall on those who believe the bereavement exclusion should be *retained*".

Although this claim is questionable for the reasons above, nonetheless this burden has been met. As our review explained, two recent studies using different samples and follow-up periods reached convergent conclusions – that having a BE-excluded episode does not elevate the probability of recurrence of depression over background rates, whereas other types of MDD have recurrence rates much greater than population levels (12,13). Pies' rejection of such evidence from epidemiological studies ignores the many well-known reasons why such studies offer superior scientific evidence and form the foundation for many DSM validity evaluations. Pies' rejection of epidemiological evidence also rings hollow because he cited primarily epidemiological studies or reviews that relied on them when he argued for the BE's elimination (7,8).

Pies' main argument against the BE has been that there is no evidence that BE-excluded episodes are "fundamentally different", "less severe or persistent", have different "prognostic or treatment implications", or "significantly differ… in terms of symptom picture, risk of recurrence, or clinical outcome" from other MDD (7,8). All of these assertions are contradicted by the recent recurrence evidence. Pies asserts that it is a "rudimentary matter of logic" that bereaved individuals meeting MDD criteria should be considered disordered, unless there is evidence that they differ importantly from other MDD cases. This is not in fact a logically valid principle (such an inference is warranted only if you have first established the essential homogeneity of the overall syndrome, something that has not been done for any DSM-defined syndrome, let alone MDE), but no matter. The recurrence studies (12,13) provide precisely the demanded evidence of important differences. By Pies' own stated standards, the evidence supports the retention of the BE.

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LETTER TO THE EDITOR

# Trainees′ views on the future of psychiatry: a plethora of challenges ahead of us

In 2010 Katschnig published a paper in this journal on internal and external challenges to psychiatry as a profession (1). The article identified six challenges for the profession: three from inside (decreasing confidence about the knowledge base concerning diagnosis and classification; decreasing confidence about the knowledge base regarding therapeutic interventions; and lack of a coherent theoretical basis) and three from outside (client discontent; competition from other professions; and negative public image). The Board of the European Federation of Psychiatric Trainees (EFPT) decided to carry out an online survey among trainees on their opinions regarding these and similar challenges.

The questionnaire asked the respondents: a) to indicate the three most important future challenges to psychiatry as a profession and challenges to postgraduate psychiatric training, and b) to rate the importance of eight statements reflecting the major challenges (all of them derived from the six identified by Katschnig) in terms of their importance on a 4 point Likert scale (very important, important, not important, not at all important). Sixty-six trainees from 32 countries, representing national trainee associations within EFPT, participated in this survey. Thirty-nine percent were male; the mean age was 30.9±3.7 years, and the mean number of years of completed training was 3.3±1.6.

In the open-ended question on the three most important future threats to psychiatry as a profession, the negative public image of psychiatry was mentioned most frequently (45.4%), followed by the questionable results of studies on psychiatric treatment (42.4%) and by the lack of a coherent theoretical foundation of the discipline (34.8%). Other issues of concern were the funding of the mental health system, the role of pharmaceutical companies, client discontent and problems of recruitment to psychiatry.

All of the eight closed questions had a very high endorsement rate ("important" or "very important"). Nearly nine of ten respondents (87.9%) regarded the negative public image of psychiatry as threatening, and related to this, nearly three quarters (74.2%) were concerned with the low status of psychatry within medicine. A majority felt that the questionable validity of psychiatric diagnosis (83.3%), the questionable results of scientific research (78.1%), and the waning confidence in the results of therapeutic intervention studies (72.3%) are a challenge. Lower endorsement, but still above 70%, was obtained for the opposing ideologies and concepts within psychiatry (71.2%). The least important threats were seen in the mounting patient and carer criticism (66.7%) and the intrusion of other professions into psychiatry's traditional field of competence (63.1%). In relation to the future of psychiatric training, two crucial challenges were identified: to improve the quality of educational opportunities (62.1%), and to achieve international standardization of training programs (31.8%).

Clearly, the issue of the negative public image of psychiatry and the problems of the validity of psychiatric diagnosis and treatment studies are a major concern of psychiatric trainees in Europe, which is in accordance with previous findings (2). What is reassuring, however, is that 94% of the respondents are not thinking of leaving the field of psychiatry and as many would advise medical students to choose psychiatry as a specialty. Over 80% said that psychiatry was their first specialty choice. So, this is a determined group, that sees the problems but will certainly cooperate in tackling them.

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# The new impact factor and immediacy index of *World Psychiatry*

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The new impact factor of *World Psychiatry*, based on citations in the year 2011 to papers published in the journal in the years 2009 and 2010, is 6.233. The impact factor of the journal was 3.896 in 2009, 4.375 in 2010, and 5.562 last year.

The journal is in the top 10 of psychiatric journals and is preceded only by the *American Journal of Psychiatry*, the *Archives of General Psychiatry* and the *British Journal of Psychiatry* among journals of general psychiatry.

The papers that received the highest number of citations during the period considered in the calculation of the new impact factor are the Special Articles by De Hert et al (1) on the metabolic syndrome in people with schizophrenia, by A.C. McFarlane (2) on the long-term costs of traumatic stress, by D. Cicchetti (3) on resilience, and by A. Bateman and P. Fonagy (4) on mentalization based treatment for borderline personality disorder; the WPA guidance papers on steps, obstacles and mistakes to avoid in the implementation of community mental health care (5,6) and on how to combat stigmatization of psychiatry and psychiatrists (7); the Forums “Are psychiatrists an endangered species?” (8,9), “Pathophysiology of depression: do we have any solid evidence of interest to clinicians?” (10), and “Problematic Internet use – research evidence and open issues” (11); and the Research Reports by J. Angst et al (12) on hypomania from a transcultural perspective, by O. Gureje et al (13) on the Nigerian Survey on Mental Health and Wellbeing, and by V. Patel et al (14) on reducing the treatment gap for mental disorders.

The new immediacy index of the journal, based on citations in the year 2011 to papers published in the same year, is 2.556. It was 0.950 last year. The journal is in the top 3 of psychiatric journals according to this measure, preceded only by *Molecular Psychiatry* (3.676) and the *American Journal of Psychiatry* (3.583). The immediacy index of the *Archives of General Psychiatry* is 2.202. This immediacy index of the journal is mostly due to the high number of citations received by papers related to the development of the ICD-11 (15-19) and by other WPA guidance papers, educational modules and recommendations (20-25).

The journal editorial staff is grateful to the authors, the referees and the WPA task forces who made these accomplishments possible.

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# THE BASE TRAINING COURSE FOR WHO'S mhGAP INTERVENTION GUIDE IS AVAILABLE FOR REVIEW AND FIELD TESTING

In 2010, the World Health Organization (WHO) launched the Mental Health Gap Action Programme Intervention Guide (mhGAP-IG), a clinical aid for assessing and managing mental, neurological and substance use (MNS) conditions in non-specialized health settings (www.who.int/mental_health/evidence/mhGAP_intervention_guide/en/index.html).

The WHO mhGAP team is pleased to announce the progress in the development of an accompanying training package.

The base training course, which is now ready for field testing, comprises 35 hours of training and covers the core knowledge and skills to assess and manage priority MNS conditions based on mhGAP-IG (including psychosis, depression, epilepsy, child and adolescent mental disorders, dementia, alcohol and drug use disorders and suicide). The objective of the training is to increase the capacity of non-specialized doctors and nurses to treat MNS conditions.

More than 100 experts have contributed to the training package, which has been piloted in countries including Ethiopia, Jordan, Nigeria, and Panama.

The mhGAP team encourages experts and organizations from around the world to review and field test the mhGAP training package. For access to the materials, e-mail mhgap-info@who.int with the subject "Request for access to mhGAP training package", with your name, affiliation and e-mail address.

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