



THE COST OF MENTAL ILLNESS

Professor J.KULKARNI
Director, Monash Alfred Psychiatry research centre (MAPrc)

INTRODUCTION

One out of every five Australians will experience some form of mental illness each year. Given the “ripple effect” of the impact of mental illness on family, friends and community it is probable that one in two Australians are affected directly or indirectly by mental illness. In 2007, almost half (45%) of all Australians had experienced a mental disorder at some point in their lifetime. ^[1]

In Australia it has been estimated that mental health symptoms result in a loss of \$ AU2.7 billion in employee productivity. ^[2]

Mental illness is the third largest contributor to the total health burden (13.2%), which is 374,541 years of healthy life lost (Disability Adjusted Life Years) and the largest overall cause of disability (27%). However, only 6.0% of the national recurrent health expenditure is spent on mental illness. ^[3]

The term “mental illness” encompasses all of the diseases of the mind – including depression, schizophrenia, bipolar disorder, severe anxiety disorders (including post traumatic disorder), substance addictions, autism, severe childhood developmental disorders, dementia, and dysfunctional personality disorders.

There has been an unfortunate tendency to blur the concept of ‘mental illness’ with that of ‘mental health’: while the former is an umbrella term covering the above array of serious, mind-related disease states, the latter refers to enhancing the state of well being in the already well population.

THE PROBLEM WITH THE MENTAL HEALTH FIELD

The facts and figures clearly show that mental illnesses are a large and growing health care cost. There is an overwhelming need to improve treatment and reduce the relapse rates. Current research investment does not reflect the importance or urgency of the developments that are required if we are to stem the human and economic costs wrought by mental illness. Only 8.9% of the 2009 NHMRC research budget was spent on mental health research and of this only 3.85% was invested in schizophrenia plus depression research. ^[4] Considering the prevalence and escalating impacts of these diseases – on individuals, families,

communities and future generations – it would make economic and humane sense to boost investment into mental health research now for immeasurable savings in the future.

1) NECESSARY FRAGMENTATION OF THE FIELD

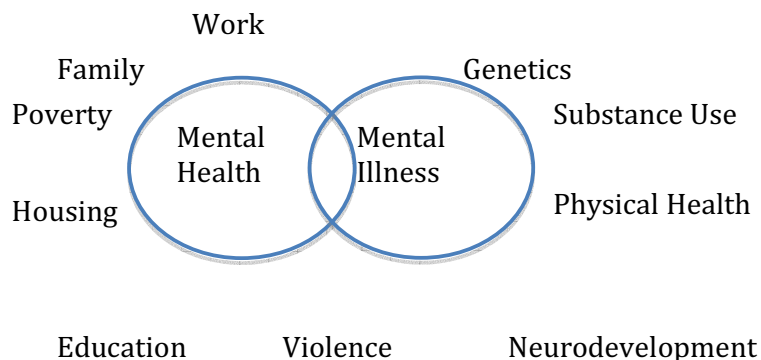
The perception that mental health is a singular field is misleading and the expectation that it is one field is erroneous. Governmental and bureaucratic insistence that workers, patients and carers in the mental health area must agree and speak with one voice is an unreal expectation, and has served as a thin excuse for delaying action until the mental health sector is unified in approach. This has not been helpful in improving treatments or outcomes for people with mental illnesses.

Due to the breadth and multidimensional character of diseases of the mind – and their interconnections with social well-being, poverty, crime and addiction – the mental health ‘field’ is and needs to be a broad area. The ‘field’ is in fact a composite of intersecting fields and as such encompasses a diverse range of disciplines and professions.

It has long been accepted that many different approaches are needed for different physical diseases. Medicine is not expected to be one “field”, and the area of mental health/ mental illness also needs to be understood in a similar way.

The wide range of approaches, treatment models, and delivery systems involved in the mental health, and mental illness, fields has sometimes resulted in unproductive competition, as various groups compete with others for scarce funding. While diversity of approach can be useful – especially given that a one-size-fits-all approach is not useful for mental illness – it can undermine the development of cohesive strategies and structures that will bring about the best results for patients.

For these reasons, better terminology and definitions are needed in the mental health and mental illness fields, plus a clearer delineation of the impact of social factors such as poverty, homelessness, addictions and crime.



2) BIOLOGICAL CONCEPTS /DEFINITIONS

Accepting that mental illnesses have at their core a biological basis provides a way forward to developing new treatments and a consistent platform for proceeding towards a uniform strategy. This intentionally narrow definition of mental illness provides solid grounding for at least part of the field and the direction and scope to develop new treatments that utilize neuroscience technologies to fast track new treatments. Such an approach enables better resolution of some of the disabling aspects of mental illness, which in turn should impact favourably on the social parameters that are associated with poor mental health.

3) PREVENTION OF MENTAL ILLNESS

Until we determine the causal factors implicated in the development of mental illness, true primary prevention is not possible. Unlike our knowledge of heart disease risk factors (such as smoking, obesity, hypertension), we are not yet in the realm of truly preventing the onset of mental illnesses. We can greatly modify their impact by early intervention with our current treatments – which mean improving early detection and providing appropriate service models to deliver early intervention effectively and broadly. However early intervention relies on effective treatments: we desperately need new treatments to allow effective interventions at all stages of illness – early, established and persistent. All age groups deserve better treatment for mental illness, and effective, new treatments will only emerge through comprehensive patient based (clinical) mental illness research.

THE WAY FORWARD

PATIENT BASED (CLINICAL) MENTAL ILLNESS RESEARCH

While laboratory based research into mental illnesses will play an important and continuing role into the future, the major area that is currently missing in the mental health/illness jigsaw is the **funding of patient based clinical research into mental illnesses**. This is research that directly treats patients while simultaneously developing an evidence base for new treatments. It is this research which will determine our future capacity to provide effective treatments and to reduce the economic and human burden of mental illness.

Unlike lab-based research, clinical research can make a big difference in a relatively short period: the time between investigation and treatment impact is between just one and five years, instead of the 20+ years required for laboratory cell or animal model research. Of course, laboratory research is needed to develop new drugs or genetic modulations for disease, and need to be funded. However, there needs to be equal and parallel funding for the transfer of lab based discovery into new patient treatments. It is this latter type of research – patient based or clinical research, also known as “translational” research, which is not funded well.

NEW TREATMENTS FOR MENTAL ILLNESSES

The Monash Alfred Psychiatry research centre ^[5] aims to provide new and effective treatments for acutely unwell populations of people across Australia. We have developed world-class interventions for severe mental illnesses. Pharmacological developments of new, emerging treatments as well as novel uses of existing medications are part of our discoveries. In addition to pharmacological interventions, we utilize and investigate psychological, cognitive therapies, neurotechnological interventions with transcranial magnetic stimulation, and other biotechnological treatments. Biomarker development or testing systems to identify early illness is also part of the clinical approach to fast tracking new treatments for mental illnesses.

Combining and centralising large-scale clinical trials with the simultaneous collection of biodata uniquely place us in an excellent position to develop new, streamlined approaches for mental illnesses such as schizophrenia, depression and bipolar disorder.

ESTIMATED IMPACT OF FAST TRACKING NEW TREATMENTS

SCHIZOPHRENIA

CASE STUDY

Joe is a 52-year-old man with a 27-year history of schizophrenia. He experienced his first episode of illness after the birth of her daughter. He heard several threatening voices that spoke about him constantly, saying such things as “ Look at him, he is a useless piece of garbage”. The voices continued day and night. Joe had a number of inpatient hospitalizations, and no medication completely returned him to his pre – illness state. Joe had been working as a brick labourer prior to his illness. He never returned to a paid job. His mother cared for him until she died when Joe was 45. Joe now lives in a boarding house, receives a disability pension and spends his days smoking cigarettes, drinking beer and watching TV. On average he is hospitalized at least twice per year.

THE ECONOMIC COST OF SCHIZOPHRENIA

The cost of managing one patient with schizophrenia per year is \$24,000 per episode, with a minimum of one inpatient hospitalization episode ^[6]. There are approximately 220,000 (1% of the Australian population) suffering from schizophrenia). An estimated 150,000 patients fall into the category of needing one inpatient hospitalization per year. ^[7]

This is a direct cost of \$3.6 billion for patient care per year for just this group. With new treatments and increasing efficiency of care delivery, we estimate at least 2.5% reduction in hospitalization which is \$90 million saving on direct costs per year. With respect to disability pensions, 60 billion dollars per year is spent in Australia. 28% of this or 16.8 billion dollars per is spent on people with mental illness ^[8].

A 2.5% reduction of this disability pension due to new treatments would be a saving of \$420 million per year. Indirect costs with carer loss of productivity is more difficult to estimate, but if we assume each person with persistent schizophrenia (assume this to be 50,000 Australians) ^[9,10] needs a minimum of one full time carer – this is approximately \$60,000 per individual in either salary of professional carer or lost salary in the case of a family member. This is \$3 billion per year in addition to the hospitalization costs described above. New treatments with a 2.5% assumed reduction in carer cost is a saving of \$75 million per year. These estimates are conservative and do not take into other indirect costs such as a return of dollars to the community in the form of taxes paid by productively working patients and carers.

DEPRESSION

CASE STUDY

Jane is a 36-year-old woman, who had been working as a public servant following completion of a University Degree. She has had 5 episodes of severe depression over 7 years, which include constant low mood, tearfulness, low energy, difficulty concentrating, loss of appetite, poor sleep and thinking about suicide. She has attempted suicide on two occasions by taking overdoses of medication. Jane feels very guilty as part of her depressive illness but also about her suicide attempts. She has been hospitalized once, in a private hospital. Jane's husband left her because he could not cope with her depression. Jane has recently lost her job because of poor work performance and absenteeism. She is receiving unemployment payments at present. Jane has a 7-year-old son, and struggles to care for him. Her son has been noticed to have learning difficulties at school.

THE ECONOMIC COST OF DEPRESSION

Depression is the fourth most common problem managed in general practice, according to data on GP activity for 2004-05. ^[11] The World Health Organisation estimates that depression will be the number one cause of disability in both the developed and developing worlds by 2030. Mood disorders (i.e. depression and bipolar disorder) are overall more prevalent among people in the 35-44 age group; while for women they are much more prevalent in the 18-24 age group, than for other age groups. ^[12] People over the age of 65 are less likely than other age groups to report depression and may not acknowledge being sad, down or depressed. ^[13]

In 2007, unemployment was slightly higher for those with a mental illness than those without (4.0% compared with 2.7%) and this was true for both men and women. 7.1% of women, compared to 5.3% of men, are more likely to report experiencing mood disorders. ^[12, 14] Essentially equal numbers of men and women develop melancholic depression and bipolar I disorder, although women are more likely to be diagnosed with bipolar II disorder than men.

Women are at increased risk of becoming depressed during pregnancy and are especially at risk during the first year after childbirth. ^[15] Postnatal depression

(PND) affects almost 16% of first time mothers in Australia. [16] In 2006, four-fifths of postnatal depression encounters in general practice were with women aged 25-44 years and almost one-fifth with women aged 15-24 years. [17] Women with a personal history, or a family history of bipolar disorder, are at an 80% increased risk of an episode occurring during pregnancy and after childbirth, and need to be monitored closely for early symptoms. [18]

The average full time wage in Australia according to the Australian Bureau of Statistics in February 2010 is \$64,000 per annum. 12.4% of Australians have severe depression – 2.7 million Australians. Of this group, the potential lost earnings are 173 billion dollars per year. It is estimated that at a minimum, 500,000 patients with depression need hospitalization every year. The cost of hospitalization is estimated to be approximately \$20,000 per patient per year for the most severely unwell depressed group of patients. Assuming one private hospital admissions per year, of 28 days inpatient stay at an average private bed day cost of \$700 derives this figure. This means that \$10 billion per year is spent on hospitalization for depression. The impact on their families cannot really be measured, but the cost of lost productivity due to marital disruption plus potential loss of health/ mental health in carers and children of people with severe depression would be anticipated to be enormous, in dollar terms.

The minimal estimated impact of new treatments (including new medications, new biotechnological methods of depression treatment, new psychotherapies plus other advanced treatments) to decrease the severe and moderate cases of depression by 2.5% is a potential saving of billions of dollars. This is not about raising awareness and finding new cases of depression, but rather about the development and implementation of new treatments, which improve the outcomes for those already receiving treatment, that is delivering only partial results. Of course the development of new treatments for depression also improves the long-term outcomes for new and emerging cases of depression.

BIPOLAR AFFECTIVE DISORDER

CASE STUDY

David is a 46-year-old lawyer with Bipolar Affective Disorder. He has had 10 years of illness characterized by 3-6 monthly episodes of depression and mania. During manic episodes, David slept 1-2 hours per night, spoke incessantly, spent vast amounts of money gambling at the Casino and in many poorly judged business schemes, drove his car too fast and recklessly, was promiscuous and very argumentative. During depressive episodes, David was reclusive, had little energy, slept for a great part of the day, and had little interest in activities and poor concentration. His life was chronically unstable and he was unable to maintain consistent work. David's wife left with their two children, being unable to cope with the consequences of his illness. He has had various treatments that have not contained either group of symptoms and also suffers from kidney disease as a result of treatment with Lithium carbonate – a standard treatment for bipolar affective disorder.

THE ECONOMIC COST OF BIPOLAR DISORDER

Estimates of the lifetime risk of Bipolar Affective Disorder range from 3- 10%. It is a difficult disorder to diagnose, with a delay of up to 12.5 years between onset and treatment. This delay means that significant damage is done to the quality of life for the sufferer and his/her family. The estimated direct cost of Bipolar disorder is \$1.59 billion per year. This is an underestimate, since the difficulty in diagnosis of the condition leads to hidden costs such as the loss of earnings, family dispute costs and cost of treatments for affected relatives.

The best treatment for this disorder still remains unclear. Our data from a sample of 240 people with bipolar disorder shows a marked confusion in the best treatment approach for patients. Significant improvement for this group and expected savings for the community would be achieved by modest investment in the development of new treatment approaches and clear guidelines for the management of people with bipolar disorder. Early detection with potential disease biomarkers would greatly improve the outcomes. An expected and highly achievable reduction in illness impact in this group of only 2% would result in a saving of \$40 million.

ANXIETY DISORDERS

This group of disorders is often under represented in consideration of mental illness treatments. One of the main reasons appears to be confusion between the widely experienced mild anxiety symptoms that most people recognize from personal experience and the severe incapacitating symptoms of anxiety disorders requiring treatment by an estimated 15% of the population.

Furthermore, the spectrum of anxiety disorders is broad – including post traumatic stress disorder, generalised anxiety, phobias, obsessive-compulsive disorder and panic disorder. The broad scope of these disorders means that the actual community impact is hard to determine. Public hospital systems do not manage people with anxiety disorders and the costs are not captured in these systems. Often, alcohol and other drugs are used to “self medicate” for the treatment of anxiety disorders, leading to secondary problems of substance addiction.

CASE STUDY

Jill lost her home 12 months ago, in a bushfire. She escaped with her children and husband just minutes before their house was burnt to the ground, and still has vivid memories of screaming and seeing the flames coming towards their car as they drove out of their driveway. Her neighbours died that day. Jill cannot eat because she can still smell burnt rubber constantly. The terrifying scene constantly plays over and over again in Jill’s mind, and she cannot sleep. She describes feeling “dead” inside and unable to engage with her family as she previously had. Jill describes feeling panic stricken several times per day – with racing heart, sweating and a choking sensation.

NEW TREATMENTS

Anxiety disorders desperately need new treatment approaches. The current information about neurophysiological and neurochemical disturbances in anxiety disorders needs to be increased and new treatments based on this can be implemented.

The currently available short, targeted talking therapies have good utility but many patients with anxiety disorders do not receive this relatively inexpensive treatment. It is estimated that decreasing the impact of anxiety disorders can make a huge saving to the economy by an achievable 2% reduction per year.

AUTISM SPECTRUM DISORDERS

Autism spectrum disorders affect 0.6% of the Australian population. Autism spectrum disorders include classical childhood autism, Asperger's disorder and atypical autism. The estimated DALY is 13,759,000 Australia wide. Autism disorders is the second leading cause of burden of disease / injury in children aged 0-14 years, with asthma being the greatest burden of disease for children in Australia.

What are Autism Spectrum disorders? They are life-long neurodevelopmental disabilities with onset before 36 months and characterised by impairments in reciprocal social interactions, impairments in verbal and non-verbal communication skills and stereotyped behaviour, interests and activities. Beginning in childhood, there are a large number of adults who continue to suffer with adult autism.

CASE STUDY

Josh is a 4-year-old boy who was noticed by his parents to be "odd" for 2 years. He shunned cuddling with his parents from an early age and always seemed to be "in a world of his own". His speech is severely delayed and he cannot communicate with language to others outside his family at all. More recently he has been spending hours each day pouring water from one container into another, and becomes very distressed if interrupted in this task. Josh's parents tried to take him to the local kindergarten, but he was unable to interact with other children and in fact hit out at them. His mother has given up her job as a doctor to care for him fulltime, with no foreseeable change in his condition.

CAUSES OF AUTISM SPECTRUM DISORDERS

Autism spectrum disorders represent an abnormality of brain development and function, appearing within the first three years of life. Although the detailed causal mechanism(s) are not known, autism is likely to have multiple causes including genetic factors. A range of studies has found in 10 - 37% of cases there may be an associated brain medical condition. Intellectual disability occurs in 70% of people with autistic disorder. Epilepsy is common and can develop at any age. Autistic disorder is more common in males than females (3:1). Asperger's disorder is diagnosed by the presence of social interaction impairments and repetitive and restricted interests as described in Autistic Disorder above. There

is usually no significant language delay, however, subtle impairments in the social use of language are present and may lead to teasing and social isolation. This disorder is more common in males (13:1) but may be under diagnosed in females. Co-existing psychiatric disorders are also common, and treatment for depression, anxiety and psychotic symptoms may also be required.

THE ECONOMIC COST OF AUTISM

Synergies economic consulting ^[19] estimate that the annual cost of Autism spectrum disorder in Australia is between \$4.5 and \$7.2 billion. This includes reduced employment, carer costs and some social services but is likely to be a gross underestimate. The Autism society of America estimates the lifetime cost for a single autism sufferer will be \$3.5 - \$5 million.

NEW TREATMENTS FOR AUTISM

The accurate and early diagnosis of autism spectrum disorder is vital. Early intervention and appropriate educational programs can be planned to minimize the impact of lost development and the forward trajectory of mental growth. Better understanding of brain abnormalities in this condition allows the discovery of new treatments to stimulate brain development with both biotechnological techniques and targeted cognitive work. An estimated achievable 2% reduction in yearly disability created by Autism Spectrum disorders would result in huge saving for the Australian economy. The “short – circuiting” of autistic disorders by new treatments means the potential restoration of a young life.

FAST TRACKING NEW TREATMENTS FOR MENTAL ILLNESS

The economic and human burden of mental illness is escalating. The way forward is to develop meaningful new treatments for mental illnesses, and this requires investment in clinical mental illness research. The returns on such investment would be high including economic savings through decreased treatment burden and increased productivity and decreased human suffering for the patient and his/her family.

In the real-world setting of patients and their families, there is great potential to discover new treatments that can be implemented quickly. For new treatments discovered in the clinical setting, the time between initial investigation and availability to patients is short between just one and five years.

With the advent of the neuroscience revolution in the past decade, we have a perfect opportunity to develop new treatments for mental illness right now. It is with exactly this purpose in mind that we have proposed further investment in the Monash Alfred Psychiatry research centre (MAPrc) to build on our new treatments and track record to achieve the important goal of fast tracking new treatments for mental illnesses.

The demand for new treatments is growing as carers and patients will no longer accept old, ineffective, non-specific treatments or vague diagnoses. The burden

of mental illness continues to grow and we need to turn our attention to ease this crippling burden on our patients, their families and the broader community – in both monetary and humanitarian terms.

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