SPECIAL ARTICLES

MENTAL HEALTH: NEW APPROACHES TO AN OLD PROBLEM

Thaddeus PU

Chair, Department of Psychiatry and Behavioral Medicine, Associate Dean for Academic Affairs, College of Community Health Sciences, University of Alabama School of Medicine (Tuscaloosa Regional Campus)

Summary

An overview of scientific advances in our understanding of mental illnesses over the last half century is considered within the Ghanaian context. Mental illnesses result from a complex interplay of brain circuitry, neurotransmitters, genetics, psychosocial and environmental factors. Stigma, based on ignorance continues to be a significant barrier to care in Ghana.

Additionally, the high cost of mental illnesses resulting from prolonged disability, lost productivity and direct and indirect treatment costs should inform strategic plans for the prevention and treatment of psychiatric illnesses. With a psychiatrist to patient ratio of 1:2 million people, it is imperative that all physicians and other healthcare providers be psychiatrically informed practitioners, if we are to adequately care for our mentally disabled citizens.

Psychiatric illnesses are significant in at least 50% of primary care visits. Untreated, they contribute to poor medical outcomes and suicide. Major psychiatric and substance use disorders are chronic medical illnesses of the brain, essentially no different from chronic illnesses of other organs like diabetes and hypertension.

Implementation of the Mental Health Law, should be guided by scientific evidence and proven multi-modal treatments, including psychopharmacology and culturally informed psychotherapeutic and community-based interventions. The law should form the basis for inter-disciplinary training in public mental health education and stigma reduction among teachers, nurses, physicians, social workers, judicial law enforcement agencies, pastors and others. Modern communications technology is currently underutilized in supporting sustainable solutions that offer protection of human rights and the promotion of resiliency and recovery, based on scientific evidence.

Key Words: Mental health, Stigma, Prevention, Education and law

Introduction

The theme for the conference is *Mental Health in Ghana; New Approaches to an Old Problem*. The problem is old as the ages but I am not entirely certain that I have all the new approaches that will be required and certainly not enough time to cover all of what needs to be addressed. However, I would like to start off by defining the few terms which will guide us over the next half hour or so.

I prefer to use the term mental illnesses rather than mental illness because the brain as complex as it is can fail a person in numerous ways. Some of the conditions are manageable without a great deal of medical intervention but many are severe enough to require significant medical treatment over a person's lifetime.

Corresponding Author: **Thaddeus P Ulzen**
Professor and Chair, Department of Psychiatry and Behavioral Medicine, Associate Dean for Academic Affairs, College of Community Health Sciences, University of Alabama School of Medicine
P. O. Box 870326, Tuscaloosa, AL 35401, USA

*College Lecture – AGSM 2015

Mental illnesses refer to a set of medical conditions that affect a person's thinking, feelings, mood, and behavior and thus their ability to relate to others and their environment in daily functioning.

Mental health conditions or psychiatric disorders affect hundreds of millions of people world- wide and as recently as the beginning of this century, the World Health Organization estimated that over 154 million people suffered from Major Depressive Disorder globally, that 25 million people suffered from schizophrenia and that over 100 million people suffered from alcohol and drug abuse disorders[1]. About a million people die each year from suicide[2]. This gives us an idea of the scope of the problem and helps us to determine how best to approach the issues that result from undiagnosed and untreated or poorly treated mental illnesses.

Mental functions are a reflection of brain processes. The brain in our field is shared by neurosurgeons, neurologists and psychiatrists. Joel Paris reminded us that neurologists deal with axons and that psychiatrists address synapses[3]. Neurosurgeons of course handle the gross and obviously visible lesions and malformations of the brain and related structures. The complexity of the brain as an organ has continued

to amaze us over time. It is estimated that the average brain has over 200 billion neurons and each neuron is connected to between 5 – 200,000 other neurons. There are 50 times more glial cells than neurons. We also know that over 50% of the human genome is connected to functions of the brain and the central nervous system[4].

Over time, we have come to understand that mental illnesses and particularly the more obviously severe ones, result from failures of neuro-transmitter function and brain circuitry which lead to symptoms that are cognitive, emotional, and behavioral. We have also come to understand that many conditions that would be observed quite commonly such as major depression (5%), schizophrenia (1%), or bipolar disorder (3%) are conditions for which obvious signs are present usually by the second decade of life. This means that mental illnesses often have their onset in childhood and adolescence.

In our capital city of Accra, with a population of 4 million, we can expect about 40,000 people with schizophrenia, 200,000 with major depressive disorder and 120,000 with bipolar disorder. We have come to recognize numerous biological markers for many previously poorly understood problems of the mind. Based on the presence of specific biological markers, social issues such as childhood maltreatment in specific individuals can lead to a trajectory of severe behavioral disorders such as conduct disorders and antisocial personality disorders. Biological markers have also been identified for major depressive disorders, schizophrenia, PTSD, panic disorders, Alzheimer's disease, and even for cannabis induced psychosis. In the last year, a biological marker, the SKA2 gene, was also found for the risk completed suicide[5].

Stigma as Barrier to access

Moving away from neurobiology and moving into the realm of society, stigma continues to be the biggest barrier to access for the appropriate treatment of mental illnesses. Patients who are suffering tremendously from these distressing and overpowering conditions postpone or avoid treatment until it is too late because of stigma. Stigma of course, is based largely on a poor understanding of mental illnesses and also on the false expectation that mentally ill individuals are inherently violent and are destined to harm to others. It is important as physicians that we see ourselves as the translators of the basic sciences of the brain (i.e. the clinical neurosciences) to the general public so that these conditions are de-mystified just as other common conditions like diabetes are now better understood by the lay public.

Poorly supported belief systems lead to the deprivation of basic human rights of our fellow citizens and family members who are already disabled by mental illnesses. There is a great deal of therapeutic nihilism around psychiatric disorders which upon the examination of evidence, has no basis at all[6].

Primary and secondary prevention

The prevention of psychiatric illnesses should be an important dimension of the public health agenda of any developing countries like ours. The prevention of psychiatric illnesses is primarily related to the identification and reduction of biopsychosocial risk factors that are identified and modifiable with careful long range planning and appropriate interventions. Prevention is also successful if protective factors and the promotion of resilience form part of the appraisal of our public health view of mental illnesses. We have to begin to apply evidence based interventions both for prevention and treatment of these disorders.

Prevention examples include the reduction of the incidence of specific disorders such as substance abuse, major depressive disorders, and post-traumatic stress disorders. The reduction of risky behaviors such as substance use and unsafe sex and the reduction of measurable outcomes such as suicide, teen pregnancy, school drop-outs and delinquency. The reduction of these variables when combined with the promotion of mental health and wellness set us on the path to a better place.

We all understand that the primary prevention relates to reduction of the incidence of new disorders and that secondary prevention is related to the reduction of the prevalence of disorders. Tertiary prevention relates to the reduction of the disability associated with disorders. All of the principles of basic public health apply to the field of psychiatry in what Gerald Caplan referred to as Population – based Psychiatry. This is particularly important because, as I will point out later, the cost of not treating psychiatric disorders is immensely disproportionate to the cost of neglecting many physical disorders that we pay attention to daily. The other aspect of prevention includes universal preventative interventions that can be targeted to an entire population, selective preventive interventions that are targeted to members of a population with known higher than average risk of particular conditions and indicated interventions that are targeted to members of the population with prodromal symptoms of the disorders, such as first episode psychoses. This would for example mean an adolescent who has marked behavioral change, such as social withdrawal or sudden academic failure may be in the prodrome of a major psychiatric disorder such as major depressive disorder or schizophrenia which if not identified accurately and early, or treated, could lead to a poor outcome such as florid psychosis or suicide. The task of accurate diagnosis in such a situation often falls on a non-psychiatric physician in the community[7].

So, in our current situation with the limited resources we have, what is the best way of implementing a preventive psychiatry approach to mental illness? I would say that the point of intervention with the greatest possible impact on the population would be school based interventions. In spite of being resource poor, all successive

governments have invested in the educational infrastructure of the country to some degree. I would propose that mental health nurses, bachelor and masters level psychologists and clinical social workers who are well trained and oriented to preventative psychiatry should become an integral part of every school's staff. It is in the educational environment that young people who are at risk for developing psychiatric disorders are probably best identified early. Where there are poor school and family bonds the risk for psychiatric disorders increases. It is also in the school environment that mental health professionals like these, can assist teachers and parents with the early identification of new problems and suggest appropriate behavioral interventions to prevent a complicated and costly outcomes for these conditions. Many who have heard me speak before will remember that I do not subscribe to the idea that a child will "grow out of the problem". Once a problem is identified as such by people who are closest to the child, either in the family context or in the educational context, the problem must be acknowledged and respected as such. In our role as physicians, if we do not know what the problem is, we must begin to find answers to the problem through consultation with mental health experts including psychiatrists. If we do not, these problems actually become more complicated with very negative outcomes such as psychotic illnesses or completed suicides. In secondary schools and tertiary institutions the role of in - house mental health professionals is critical because as I intimated earlier, it is at this stage of development that the first symptoms of major psychiatric disorders emerge. Issues related to substance abuse, interpersonal relationships and academic pressures all converge at this stage of life and if our institutions are not well resourced with mental health professionals, we fail in our preventative role with the students[8].

Tertiary Prevention

In returning to tertiary prevention, which has more to do with the reducing disability through treatment, we are better served by recognizing major psychiatric illnesses as chronic medical conditions. They are as chronic as essential hypertension or diabetes. All of these conditions tend to have a genetic or biological risk which in interaction with a person's environment can result in the expression of a full blown illness. We must approach major psychiatric illnesses with evidence based treatments and not with clinical intuition or unsystematic clinical experiences. We must use treatments that have been rigorously tested and shown to be advantageous. This is no different than how an internist would approach a patient with cardiovascular risk who has significant hypertension or a patient who has type I or type II diabetes. A few years ago in a class at one of our medical schools – a student expressed pessimism about the outcomes for major psychiatric illnesses to me. He said that you don't "cure these patients" I took a deep breath and I told him that for the last 26 years I have been taking anti-hypertensive medications on a daily basis and that my physician specialist had not cured my hypertension. It was being managed with treatment and in the same way, patients with schizophrenia, bipolar disorders, major depressive disorders, and generalized anxiety disorders can have their symptoms well managed enough for them to have a functional life and contribute to society.

Cost and disease Burden

Let me turn to cost and disease burden. As we all should know by now, psychiatric conditions account for about 35% of the global disease burden. This is because psychiatric disorders cause relatively more morbidity than mortality except in the case of suicide and premature death from medical illnesses. Cardiovascular conditions account for 33% of global disease burden and in the year 2010 the cost from lack of productivity globally for cardiovascular conditions was $863 million. However, the cost in the same year for psychiatric disorders was $2.5 trillion dollars in lost productivity. In 2030, the estimated cost in lost productivity for cardiovascular disorders will be $1.04 trillion globally compared to $6 trillion globally for psychiatric disorders. I don't think there is any doubt that a strong preventative approach with early case finding and rigorous treatments will go a long way to prevent the escalation of cost over time [9, 10].

Where do people go when they begin to have their first symptoms of a psychiatric disorder? In many situations they go to their primary care physician or other health care provider at the district or regional level. They also speak to family elders, pastors or if there symptoms are flagrant enough they may be sent to a prayer camp where they will lose all their basic human rights, will be chained and will not be provided with any evidence based treatment. While spirituality is important component of good health, it is not an alternative to recognized treatment options.

In the primary care context it is now acknowledged that about 15% of patients see a primary care provider primarily for a psychiatric reason and 50% have a significant psychiatric problem accompanying the presenting complaint in the primary care setting. The WHO estimates that 25% of all patients using a health service suffer from at least one mental, neurological or behavioral disorder, most of which are undiagnosed or untreated.

Psychiatry therefore is a significant primary care concern. As a medical educator it strikes me that knowing this, the curriculum in undergraduate medicine should reflect this reality and equip graduates with knowledge and diagnostic skills to recognize common psychiatric conditions in the primary care setting. These would be conditions like major depressive disorder, early schizophrenia, anxiety disorders, and substance abuse disorders and for

children, attention deficit hyperactivity disorder and autism spectrum disorder.

In addition to the presentation of psychiatric symptoms in a primary care setting there are numerous medical illnesses that present first with psychiatric symptoms and our practitioners need to be well aware of these. The presence of a psychiatric illness that is untreated tends to worsen medical morbidity and disability. Medical mortality rates are worsened by untreated psychiatric illnesses. We know that patients with severe and persistent mental illnesses have a mortality that reduces their lifespans by 25% [11]. The mind and the body clearly are separated in our own minds but that is certainly not the human experience.

Role of Mental Health Authority

It is our expectation that the newborn Mental Health Authority will likely develop a vigorous public mental health education approach since we all know that the behavioral factors account for up to 50% of the social determinants of health. We must have continued education for practitioners like ourselves because we must start the de-stigmatization process within our own professional community.

Teaching and curriculum development

The teaching of psychiatry in medical schools should be more rigorous because most non psychiatric physicians will end up treating many patients with psychiatric disorders in the ambulatory setting and must do so guided by the best scientific evidence. At the University of Cape Coast School Of Medical Sciences (UCCSMS) where I teach regularly, we have a curriculum in psychiatry that is more than 10 weeks in duration. The average length of psychiatric rotation worldwide is 5.5 weeks[12]. In a developing country like ours, we have to invest more in improving the psychiatric management skills of the generalists because they will be required to do more than those in developed countries. We also have to consider other educational interventions. I believe for example that offering an additional year of training to family physicians in behavioral health and psychiatry would be a worthwhile investment as is available at the College of Community Health Sciences at the University of Alabama where our department instituted such a program in 2007. There are also examples of primary care residency programs that are only a year longer that combine psychiatry with internal medicine, family medicine or neurology. This approach will help increase the number of primary care and other specialists with skills to address the needs of many patients currently do not benefit from proper psychiatric evaluations and evidence-based treatment interventions.

Professional education and practice

Overall, we must increase our emphasis on inter-professional education and practice and recognize the role that non physician healthcare providers can play in providing better mental healthcare across the population. Every health unit must have a mental health physician extender present from the district level up. Psychiatrically informed physicians will be effective leaders in educating the general public through patient care and community speaking opportunities on prevention and treatment of psychiatric disorders. As I mentioned earlier, a strategy for prevention of psychiatric disorders centered on our educational infrastructure will have a sustainable impact on the population, reduce costs, decrease lost productivity and promote overall health and wellness. Every school must have a well-trained mental health professional to lead the prevention effort and liaise with the health care system.

Law enforcement

Law enforcement and judicial officials also need formal training in mental health, as many patients come into contact with the legal system and often face inappropriate outcomes with loss of their constitutional protections. One other area that time does not allow me to address is workplace mental health and the additional loss of productivity from presenteeism when compared to worker absenteeism [13].

Currently, I believe the new Mental Health Law in Ghana will provide a basis for the implementation of some of the ideas that I have shared with you today but, I would be remiss in not mentioning technology as a tool that we have grossly underused. It presents a missed opportunity for both education of trainees and the treatment for psychiatric disorders in Ghana. There is no reason why we cannot develop a telehealth network which would allow primary care physicians wherever they are to have access to specialists in Ghana and even outside Ghana, to consult with them on patients they manage every day [14].

Conclusion

In conclusion I would like to return to the brain, the organ at the center of these disorders. I wish to highlight the plasticity of the brain. Just as it has strong biological underpinnings, it is also very much an organ that is shaped by the environment in which it lives. Advances in neuroscience research have led to a more sophisticated understanding of how psychotherapy may affect brain functioning. Mental phenomena arise from the brain, but subjective experiences also affect the brain. While psychotherapy and other environmental inputs will not change the genes, they can affect the transcriptional functions of gene expression and as such, psychotherapy and other non-medical interventions can have a lasting positive impact on the brain. It is said that medication may target temperament and psychotherapy targets character.

Studies on the neuroscience of environmental impact on the brain remain preliminary but clearly there is a very large role for psychologists and other

mental health therapists, like clinical social workers in the treatment of psychiatric disorders on the basis of what we know about the plasticity of the brain and how it changes based on externally derived inputs. In the same way that trauma can affect the brain to cause post-traumatic stress disorder, psychotherapy can cause the brain to become resilient enough to reduce the risk of psychiatric disorders and to reduce the full expression of already present disorders.

Psychiatric disorders are extremely common. 1 in 4 persons will have a diagnosable psychiatric disorder in our lifetime and the disability engendered by major psychiatric disorders is significant. The degree of disability caused by MDD is thought to be equivalent to that of blindness or paraplegia. Schizophrenia is similarly estimated to cause a degree of disability consistent with quadriplegia. These are not insignificant conditions. The mind is at the core of who we are but we take good mental health for granted. We have a great task and responsibility to change our thinking about these brain conditions from what prevailed in the 17th century to the 21st century's integrated understanding of these conditions. I must however remind you that at the turn of the 20th century, Africans were well ahead of Europeans in psychopharmacology. In 1925, when a prominent Nigerian went psychotic in England, there were no effective treatments available. His traditional healer who arrived weeks later from Nigeria treated him effectively with Rauwolfia root. He had better medicine than any European or American Psychiatrist of that era[15].

I have simply touched on a few areas in the time available to me but I would like to end by saying that in the last three or more decades that I have been in practice as a psychiatrist, every decade has come with better and more effective treatments for mental illnesses. We have a great opportunity to design effective prevention and treatment systems even with the limited resources we have by applying those resources within a different conceptual framework. Thank you very much for the opportunity of speaking to you this morning.

References

1. Baxter AJ, Patton G, Scott KM, Degenhardt L, Whiteford HA. Global Epidemiology of Mental Disorders: What Are We Missing? Bhutta ZA, ed. *PLoS ONE*. 2013; 8 (6).
2. Bertolote JM, Fleischmann A. Suicide and psychiatric diagnosis: a worldwide perspective. World Psychiatry. 2002 Oct: 1(3):181-5.
3. Paris J. Psychiatry and Neuroscience. Can *J Psychiatry*. 2009; 54(8):513-517.
4. Herculano-Houzel S. The Human Brain in Numbers: A Linearly Scaled-up Primate Brain. Frontiers in Human Neuroscience. 2009; 3:31. doi:10.3389/neuro.09.031.2009.
5. Guintivano J, Brown T, Newcomer J, Jones M, Cox O, Maher BS, Eaton WW, Payne JL, Wilcox HC, Kaminsky, ZA. Identification and Replication of a Combined Epigenetic and Genetic Biomarker Predicting Suicide and Suicidal Behaviors. *American Journal of Psychiatry* 2014 171:12, 1287-1296
6. Byrne P, Psychiatric stigma. *The British Journal of Psychiatry* Mar 2001, 178 (3) 281-284.
7. World Health Organization. Prevention of Mental Disorders: Effective Interventions and Policy Options. Summary Report: http://whqlibdoc.who.int/publications/2004/924159215X.pdf
8. National Research Council (US) and Institute of Medicine (US) Committee on the Prevention of Mental Disorders and Substance Abuse among Children, Youth, and Young Adults: research advances and promising interventions. In: O'Connell ME, Boat T, Warner KE, editors. Preventing mental, emotional and behavioural disorders among young people: progress and possibilities. National Academic Press (US); Washington, DC: 2009.
9. Kessler RC, Heeringa S, Lakoma MD, Petukhova M, Rupp AE, Schoenbaum M, Wang PS, Zaslavsky AM. The individual-level and societal-level effects of mental disorders on earnings in the United States: Results from the National Comorbidity Survey Replication. *American Journal of Psychiatry,* 2008 May.
10. Hu, T. An International Review of the Economic Costs of Mental Illness. Disease Control Priorities Project Working Paper No. 31. 2004.
11. Colton CW, Manderscheid RW. Congruencies in Increased Mortality Rates, Years of Potential Life Lost, and Causes of Death among Public Mental Health Clients in Eight States. Prevention of chronic Disease, 2006; 3, A42.
12. Lyons Z, Janca A. Impact of a psychiatry clerkship on stigma, attitudes towards psychiatry, and psychiatry as a career choice. BMC Medical Education. 2015; 15:34.
13. Cooper C, Dewe P. Well-being--absenteeism, presenteeism, costs and challenges. Occup Med (Lond). 2008 Dec; 58(8):522-4.
14. Roberts M, Mogan C, Asare JB. An overview of Ghana's mental health system: results from an assessment using the World Health Organization's Assessment Instrument for Mental Health Systems (WHO-AIMS). *International Journal of Mental Health Systems*. 2014; 8:16.
15. Prince RH. The use of Rauwolfia for the treatment of psychoses by Nigerian native doctors. *American Journal of Psychiatry*, 1960; 117, 147-149.