

## Chemical imbalance and mental health

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### Abstract

No chemical imbalances have been proven to exist in relation to any mental health condition, like serotonin deficiency in synapses in the so-called depressive disorders or dopamine imbalance and dopamine receptors distribution in so-called schizophrenia. No independent objective biological marker or current brain imaging science like fMRI exist to date in support of any psychiatric diagnosis, and finally yet importantly, no biological causes exist for any of the so-called psychiatric disorders. If we avoid Cartesian dualism, the claim that mental disorders are biological is obviously a tautology. Given the facts above, psychiatric diagnostic manuals, such as the DSM and ICD, are school examples of what evidence-based science is not and represent nothing but a failed attempt to build a legal road from Health Care to Hell Care by over-medicalization and by the suffering of human and non-human animals. Furthermore, psychiatric drugs can have long-lasting effects on the brain and the central nervous system, while, the withdrawal from them can cause a range of severe physical and psychological effects.

**Keywords:** Scientific Freedom, Medical Metaphors, DSM Diagnostic Invalidity, Pseudoscience, Placebo/Nocebo, Iatrogenic disease, Neuroethics.

### Abbreviations

DSM: Diagnostic and Statistical Manual of Mental Disorders; fMRI: functional Magnetic Resonance Imaging; ICD: International Classification of Diseases; RCT: Randomized Controlled Trial; CBI: Chronic Brain Impairment.

### Introduction

We were privileged to participate as invited guests at the Symposium about Scientific Freedom in Copenhagen and the inauguration of the Institute for Scientific Freedom. During the Symposium, Peter Breggin, Peter C. Gøtzsche, Robert Whitaker and others presented robust data and firm arguments regarding concerns about contemporary “evidence-based” medical practices. Especially topics such as: Why do we need an Institute for Scientific Freedom?; Is it possible that medical journals are an extension of the marketing arm of pharmaceutical companies?; WHO is the brain in the system: The sound of silence? A case study of how public health vaccinology deals with fundamental contradictions of current policy; The many forms of scientific censorship in psychiatry; Academic oppression and other impediments to informing about nutrition; Open science, open data: Do we need an alternative to the Cochrane Collaboration? have come to our attention, to name but a few.

This inspired us to write the present paper in which we focus particularly on the inconsistencies and paradoxes of the current

biomedical model of mental disease. The paper consists of four sections. In the first section, we discuss, according to the participants mentioned above, the two most popular misleading and routinely used medical metaphors (myths) among biologically trained physicians in everyday practice: the myth of chemical imbalance, and the myth about genes playing a central role in mental disorders. In the second section, we briefly introduce the critique of the DSM Manual from their own leading authors/editors and other leading authorities in the field. In addition, we provide further evidence for why such diagnostics is a pseudoscience and why it represents a prime example of what evidence-based medicine is not. In the third section, we explain how such medical metaphors, diagnoses and misleading terminology lead to iatrogenic problems, stigma, unnecessary suffering, unethical treatments, and produce harmful effects (nocebo) by authority-induced false beliefs in a physician/patient relationship regarding the possibilities of getting well again. In the fourth section, we further support previous evidence by scientific research of the expertise in the field of mental illness of more than 50 years written by university professor of psychiatry Thomas Szasz (1920-2012), who was the first psychiatrist among others that offered rational support for doubting the existence of mental illness. His line of reasoning perfectly fits into the contemporary mental health care crisis (non-scientific treatments, a misleading and invalid diagnostic system, over-medicalization, iatrogenic problems, and poor long-term outcomes). By applying

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his pioneering work, in particular “The Myth of a Mental Illness”, we show how his concepts are even more alive today than they were 50 years ago. Last, but not least, we conclude that the only solution, which will/may/could/should also be less painful, lies in radical change of the current medical paradigm and practice.

## Two Most Popular Medical Metaphors (Myths)

### Myth#1 Genes play a central role in mental disorders

In contemporary medicine, there are many medical myths presented as scientific facts and used in every day medical practice: the first one claims that genes play a central role in the onset of mental disorders. Oddly enough, except for dementia and some rare chromosomal disorders, no known genetic causes for any mental health condition exist. David Curtis analyzed data from 50,000 exome-sequenced UK Biobank participants. According to Curtis “no gene or gene set produced a statistically significant result after correction for multiple testing. None of the genes or gene sets with the lowest p values appeared to be a biologically plausible candidate.”. He analyzed 5,872 cases and 43,862 controls and there were 22,028 informative genes. “No gene is formally statistically significant after correction for multiple testing, and even those which are ranked highest and lowest do not include any which could be regarded as being biologically plausible candidates,” he adds. Accordingly, there are no useful biologically based tests (brain scans, blood tests) that are able to provide a reliable measure in support of any psychiatric diagnosis [1,2,7,8]. Furthermore, modern genetics now unequivocally accepts that our biology always functions within the context of our environment and the research clearly shows how epigenetic markers alter and develop according to adaptation processes of an individual to the environmental conditions [1-6].

### Myth#2 The myth of “chemical imbalance”

The second popular pseudoscientific term is the myth of “chemical imbalance” which stands on the position that psychological moods and states are caused by chemical imbalances. Despite the over half of a century of countless research on chemical imbalance theory, there is still not a single data in support of the theory to date [10,12-19]. The general inescapable conclusion of neurotransmitter-depletion studies show that low levels of monoamines serotonin, norepinephrine or dopamine are not the causes for any of the mental health conditions [10, 19]. However, the sad reality is that psychiatric drugs are often prescribed to patients based on the myth, that they cure a “chemical imbalance”. This paradoxical state is best recognized by tianeptine, a selective serotonin reuptake enhancer, which decrease HDRS by the same score as selective serotonin reuptake inhibitors. This puzzling fact was, interestingly, revealed by Slovenian artist and writer Branko Gradišnik (ref) in his book “Iskanje izgubljenega zdravja” (searching for the lost health).

### Dsm/Icd Invalidity

Psychiatric diagnostic manuals DSM and ICD lack validity, are not works of objective science, but rather pseudoscientific descriptions of symptoms for behaviors of our/a culture since they have largely been developed through clinical consensus and voting [10]. Their validity and clinical utility are therefore highly questionable, yet their influence has contributed to an expansive medicalization of human experience [20]. In an open letter to the DSM-5 Task Force and the American Psychiatric Association, many researchers in the field of mental health, including former task force editors of the

DSM project, have summarized an extensive critique of the lack of DSM validity and possible consequences of such a diagnostic system [20]. Accordingly, psychiatric diagnostic manuals such as the DSM and, in less extend, ICD are prime examples of what evidence-biased science is and represent an attempt to build a legal road to over-medicalization and unnecessary suffering [11].

### Unrecognized Facts of Psychiatric Practice

In this section, we briefly mention some unrecognized facts about psychiatric practices, which have a wide range of dangerous and harmful consequences. The use of psychiatric drugs tremendously affects brain chemistry and thus produces altered mental states instead of cures diseases (reverses a condition). In order to fulfill the full medical status, both psychiatry and the pharmaceutical industry together embraced the “disease centered model” despite the lack of evidence supporting it [10,19,21]. The fact that all psychiatric drugs also have psychoactive effects on healthy volunteers, additionally undermines the disease-centered model [19,21,22] and actually fits in the drug centered model. This alternative model, namely a drug-centered model, seems more appropriate to address the mental health solutions. According to this model, Ppsychiatric disorders are defined in line with the mechanism of action of these drugs, for example, since SSRIs elevate the level of serotonin in synapses, the depression is defined by the lack of this mediator. It was not, instead, first established the biochemical foundation of depression and then created drugs that correct the altered state. This is possible if we take into account that the mechanism of action of many of psychotropic drugs is poorly understood [23-26]. There are no clear associations between pharmacological actions of any psychiatric drug and the mental health conditions exist [23-25]. A growing body of evidence now shows that effects on the brain caused by psychiatric drug intoxication, especially if taken long term, can lead to cognitive, emotional and physical problems.

Psychiatric drugs in general have specific psychotropic effects, sedative and/or stimulative, that over time cause other neurotransmitter systems to react to these effects causing altered state of conciseness. In his paper [27] Peter Breggin explains one such effect as chronic brain impairment (CBI). He describes this syndrome as being associated with generalized brain dysfunction. The symptoms of CBI include impaired short-term memory and learning disabilities, apathy, concentration problems, loss of motivation and empathy, emotional lability and increased irritability [27]. He also explains another syndrome caused by psychiatric drug intoxication: anosognosia, also known as “medication spellbinding” which leads the affected person to incapacity to recognize how psychotropic drugs change their psychological states and moods and distort the perception of their reality [28]. In his book *Psychiatric Drug Withdrawal*,(ref), Breggin provides a detailed explanation of the harmful effects caused by a long-term use of psychoactive drugs and also explains how withdrawal effects can be dangerous while coming off of psychiatric medications, especially abruptly [29]. Psychiatric drugs can have effects that include mood disturbance, violence, and withdrawal syndromes, characterized by many forms of unexpected behaviors and irrational decisions [31,32]. These can be misdiagnosed as new psychiatric issues, for which additional drugs may be prescribed. Breggin also points out how such withdrawal effects are often misdiagnosed and falsely interpreted as a relapse of initial conditions. Since withdrawal effects mimic the original

symptoms, it is often difficult to distinguish between the two [29]. The withdrawal from psychotropic drugs can be disabling and can evoke severe physical and psychological effects which often last for months and sometimes years [29,30]. Despite the robust evidence that increased use of medications by children and adolescents may lead to worsened long-term outcomes, the expansion of psychotropic drug prescription among psychiatrists in this population is still growing. Some prominent child psychiatrists raised concerns and argued that the extremely unhealthy interdependence between pharmaceutical companies and physicians has completely distorted child psychiatric practice by overdiagnosing/overmedicating and turned the practice away from psychological and psychosocial approaches [33]. Most of the drug trials are performed within pharmaceutical companies in cooperation with academics who have extensive ties with them. Medical journals are an extension of the marketing arm of pharmaceutical companies and many times this industry hides negative results in order to emphasize positive outcomes, which is not only far away from evidence-based medicine but is also dangerous for those who prescribe/use these psychotropic drugs [34-38].

### The Myth of Mental Illness

Thomas Szasz has elegantly explained the distinction between behavior and disease. He strictly separated behavior from a disease entity. For him the definition of disease entity can belong solely to a biological body but not to the mind. Thusly, mind as nonmaterial substance cannot be sick. Other things, like behavior and societies, can only be "sick" in a metaphorical interpretation as Szasz was prone to point out [39]. His line of reasoning perfectly fits into the contemporary mental health care crisis mirroring through overdiagnosing, over-medicalization, iatrogenic problems and poor long-term outcomes. In his famous paper "The Myth of a Mental Illness" one can immediately see how even today his concepts are more alive than they were 60 years ago: "I have tried to show that the notion of mental illness is outlived, whatever usefulness it might have had. and that it now functions merely as a myth. The notion of mental illness thus serves mainly to obscure the everyday fact that life for most people is a continuous struggle not for biological survival but for a place in the sun, peace of mind or some other human value. For man aware of himself and of the world about him, once the needs for preserving the body (and perhaps the race) are more or less satisfied, the problem arises as to what he should do with himself... Our adversaries are not demons, witches, fate, or mental illness. We have no enemy whom we can fight, exorcise or dispel by cure. What we do have are problems in living [40]".

### Discussion and Conclusion

Psychiatric drugs are extensively prescribed to children and adolescents, even though they produce altered mental states, they are very harmful and do not "cure" diseases. Since RCTs are mostly short-lived we can only guess about long-term effects. There is clear scientific evidence that many psychiatric drugs do no better or little better than placebo pills and all the major classes of psychiatric drugs demonstrate little additional long-term effect, while some subjects show significantly worsened long-term outcomes. Psychiatric drugs can have effects that mimic the original symptoms of a distressed person, which are difficult to distinguish. This promotes additional misdiagnosing and creates dangerous iatrogenic issues that are treated by additionally prescribed drugs, which leads to over-

medicalization (intoxication) and lifelong use of multiple harmful psychiatric drugs. It seems that medicine/pharmaceutical industry in general and psychiatry/psychopharmacology in particular are caught in a trap and cannot find a way out. In order to resolve this puzzling situation and unnecessary suffering, we propose some practical solutions that could have treatment implications on both mental health professionals and humans.

The evidence presented in this paper sheds some light on critical areas in contemporary mental health medical practice and calls for rethinking the biomedical model of mental illness. Crisis raised by invalidity of psychiatric diagnostics, a lack of biological markers with nonexistent biological causes for any of the so called psychiatric disorders, the conflict of interest and the manipulation of clinical trial data have led to obvious human harm and unnecessary suffering. The evidence presented calls for a radical change of the current psychiatric practice as it is far from being evidence based. In order to rebuild public trust, trials need to operate without any farmaco-industry influence, overseen by independent academic institutions. Until then, psychiatric nosology of mental conditions will remain nothing but pseudoscientific descriptions of problems of living, expressed in a language of human behavior [39].

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