

# Conceptions of Mental Illness and Psychopharmaceuticals in Global Health

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**Abstract.** The field of global health has prioritized the scaling up of services and treatment for mental health in low and middle-income countries. While equitable access to treatments constitutes a priority, the call for urgent action to fill the treatment gap has been advanced largely in the absence of an appeal for ethnographic attention to sociocultural knowledge of conditions and their treatment. This article argues that local knowledge of conceptions of mental illness and psychotropic medication is foundational for an informed understanding of treatment in relation to subjective experience, cultural meaning, and clinical efficacy. These issues are specifically explored in relation to scientific, clinical, and popular discourse surrounding the cultural trope of “chemical imbalance.”

**Keywords:** cultural conceptions of mental illness; psychopharmacology; chemical imbalance; global mental health.

**Sumario.** 1. Introduction. 2. Conceptions of Chemical Imbalance among People Who Take Psychotropic Drugs. 3. Conclusion: Lived experience, structural violence, and global mental health. 4. References.

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## 1. Introduction

The worldwide prevalence of mental illnesses and psychopharmaceuticals is widely recognized. Questions surrounding the subjectivity of how illnesses and drugs are experienced and imagined in various settings, however, have not been a central concern for global health. Instead, the primary concern has been the material availability—or unavailability—of drugs. The problem of lack of availability of psychotropics within low and middle-income countries has been emphasized as a “treatment gap” (Barbui, Kolappa, Saraceno, *et al.*, 2017; Patel, Saxena, Lund *et al.* 2017; Craddock and Tobbell, 2021). While equitable access to treatments constitutes a priority for global health (Farmer, 2003), the rush to fill the mental health treatment gap should not be pursued in the absence of attention to what we can term a socio-cultural knowledge gap concerning ethnographic understanding of local health conditions and their treatment (Whyte, van der Geest, and Hardon, 2003; Whyte, 2009; Read, Adibokah, and Nyame, 2009; Jenkins, 2010; Read, 2012). As documented for antiretrovirals in the treatment for HIV and AIDS, the material availability of drugs is distinct from cultural understandings or socioeconomic conditions that affect their use (Kalofonos, 2021). Indeed, attention to fundamental sociocultural knowledge is typically bypassed as inconsequential for the bio-imperatives of global health intervention.

For decades now, conceptions of mental health problems and psychotropics have been talked about

with reference to “chemical imbalance” within English-speaking countries (e.g., US, UK, Australia). The reference has been invoked across a range of conditions to include psychotic-related, mood, and anxiety disorders, among others. The relation between disorders and psychotropics as functions of chemical imbalance and the means to correct that imbalance has been widespread within clinical discourse and patient care settings. As casual yet deeply presumptive cultural knowledge over the course of some three decades, the expression’s metaphorical properties facilitated its imbrication in the popular and clinical imagination among suppliers, providers, and patients. This article examines the currency of chemical imbalance as a discursive trope across and within these groups.

Within neuroscience, a primary area of investigation has been brain-based processes associated with mental disorders (Gazzaniga, 2011; Churchland, 2013). To reference this research in clinical practice and psychopharmaceutical promotion, the term chemical imbalance has been intended as kind of “shorthand” to refer to imagined excesses or deficits of monoamine neurotransmitters—such as dopamine, serotonin, or norepinephrine—that communicate via nerve impulses across synapses from one neuron to another. As neuroscientists agree, however, hypothesized excesses or deficits are not straightforward; while there is a broad assertion of the prominent roles of neurotransmitters, there is also considerable uncertainty of precisely how these processes work. A report by the *American Chemical Society*, drawing on

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research by Sabine Bahn's team from the University of Cambridge, summarizes this state of affairs:

“Surprisingly, scientists still do not fully understand how these drugs work on a molecular level, so clinicians generally prescribe medications on a trial-and-error basis... (t)he molecular bases of the disorders are mysterious as well...We don't know what causes symptoms, so therefore we don't have drugs that are specifically designed for the diseases and we don't have animal models that reflect the disease because we don't know what causes it... So, we are in a vicious cycle and haven't really made much progress over the last hundred years.” (Bahn quoted in Cottingham (2009:1618)).

In *Psychopharmacology Demystified*, Lichtblau framed the problem of the known and unknown with respect to the chemistry of the brain. In this work intended as an informed clinical overview and guide, he cautiously indicates that while “much has been learned about how the brain functions, there is still much to discover. The fact is ‘We don't know what we don't know’” (2011:2).

Recently, however, the state of affairs regarding what is not known regarding “chemical imbalance” has been in upheaval in the wake of a controversy over how, more precisely, to understand mental illness and its treatment. A significant review article concluded that the serotonin theory of depression is not only scientifically unfounded but also popularly misleading (Moncrieff, Cooper, Stockmann, *et al.*, 2022). Media attention to this publication has been extensive; indeed, it went viral across many international news outlets (Science Media Centre, 2022). In discussing their findings for serotonin, the authors comment on the sustained circulation of “chemical imbalance” in the absence of strong scientific foundation:

“The chemical imbalance theory of depression is still put forward by professionals, and the serotonin theory, in particular, has formed the basis of a considerable research effort over the last few decades. The general public widely believes that depression has been convincingly demonstrated to be the result of serotonin or other chemical abnormalities, and this belief shapes how people understand their moods, leading to a pessimistic outlook on the outcome of depression and negative expectancies about the possibility of self-regulation of mood. The idea that depression is the result of a chemical imbalance also influences decisions about whether to take or continue antidepressant medication and may discourage people from discontinuing treatment, potentially leading to lifelong dependence of these drugs” (Moncrieff, Cooper, Stockmann, *et al.*, 2022:11).

Critique of biomedically infused “chemical imbalance” to refer both to mental health conditions and psychotropic drugs for their treatment (see also Ang, Horowitz, and Moncrieff, 2022) has put some in medicine and psychiatry on the defensive. Much of the attention has been directed to how the findings might serve to dissuade people who may nonetheless benefit from

taking SSRIs to continue their treatment. As part of a summary of “expert reaction” to the article by Moncrieff and colleagues (2022), one research scientist argued that even if biological causes of depression “move away” from theories focused on serotonin, there is “really no reason to question the effectiveness of current antidepressants” (de Picker, 2022).

Treating clinicians who do not claim precise knowledge of how or why a given treatment may work take comfort in prescribing psychotropics on the basis of clinical observations and patient reports of efficacy. As psychoactive compounds that are understood as biologically discernable by virtue their alleviation of symptoms, the question of how these drugs “work” is of lesser interest and does not necessarily require clinical explanation. In this line of reasoning, questions of scientific precision are not only of minor importance but also a potentially dangerous distraction from the overriding directive to provide treatment to those afflicted. If that line of thinking is satisfactory to providers, what about persons who arguably matter most, the persons who live with mental health conditions and who actually take psychotropic drugs? How do they conceptualize the problem? Is the notion of “chemical imbalance” actually used? And, if so, is it satisfactory, and does it matter?

## 2. Conceptions of Chemical Imbalance among People Who Take Psychotropic Drugs

From a global perspective, the conceptualization of chemical imbalance in the popular imagination has not been the subject of systematic study. That said, the transnational circulation of the metaphor is surely uneven. Two anthropological observations are relevant. First would be the particularly peculiar circulation of the conception that brought it to prominence in the United States. For physicians and consumers, this circulation transpired through reliance on direct-to-consumer advertising in medical journals and popular magazines that featured psychotropics in relation to heroic physicians, uncanny mystery, and divine miracles. These associations evoke the classic anthropologically symbolic *mélange* of science, religion, and magic (Malinowski, 1954). Second is the observation that while conceptions might hold cultural cachet in one setting, they cannot be expected to travel well across continents and cultural contexts. For example, pharmaceutical advertisements targeting Mexican physicians appeal not to chemical imbalance but instead to *sufrimiento neuronal* that is located within the brain (“Somazina” advertisement by Ferrer Internacional). *Sufrimiento* holds greater cultural cachet that misfiring neurons. Within India, psychopharmaceutical drugs can be variously imagined as “mind food” that many people seek for treatment of “gastrointestinal nutrition” (Ecks 2013). While the global diffusion of the “chemical imbalance” trope has been presumed among persons who take the drugs, less anticipated has been the ways in which the notion is inapt even within countries in which it was generated and where it was presumed to culturally “work” (Obeyesekere, 1990).

To illustrate these issues, I turn to an ethnographic study of the subjective and cultural experience of persons taking antipsychotic and other psychotropic drugs for treatment for schizophrenia-related conditions. The study, conducted in the United States, examined the everyday life and subjective experience of ninety persons who were diagnosed according to research diagnostic criteria (Jenkins, Strauss, Carpenter, *et al.*, 2005; Jenkins, 2015). Research participants were of Euro-American and African-American descent and had been ill for about two decades. Through open-ended interviewing, we learned about persons' conceptions of their condition and experience of medication. In particular, we investigated use of the term "chemical imbalance" to refer to their illness condition and treatment experience.

The anthropologically fundamental question of how people conceptualize their illness and define their experience is important not only for the course of illness but also for the sense of self (Kleinman, 1988; Jenkins, 2015). Analysis of interview data showed that of the ninety study participants, fifty (55,5%) used the language of "chemical imbalance" to describe the problem. A smaller number, twelve (13,3%) indicated that they considered their primary problem to be one of "stability." Yet another third (31,1 percent) endorsed neither idea, citing a wide array of illness concepts. While this illustrates that the most common conception of the problem may include the language of "chemical imbalance," it is clear that a sizeable proportion do not endorse this idea. For persons in the study who did use the language of chemical imbalance, while the problem was located within the brain, how this worked was unclear. It could mean lacking a chemical, an abnormal level of chemicals, excess chemicals, abnormal brain structure, or "firing neurons". Also noted were "juices in the brain" or "electro-physical" problems. Moreover, these narratives of chemical imbalance drew on ethnopsychological models of the body, psychotropic drugs, and the self.

In comparing participants' narratives, Euro-Americans were more likely to speak in the language of chemical imbalances, while African Americans were relatively more concerned with bodily "stability" and "balance." These latter concerns did not highlight chemicals but instead social problems—often kin-related—that may involve spiritual struggle or a magical spell. Ethnographic work with African American families living with mental health conditions found that African Americans' conceptions were less medicalized compared to Euro-Americans with less interest in talking about illness-related questions. Reluctance to speak about specifically illness-related concerns may be rooted in a preference for not discussing family matters or personal "business" (see also Carpenter-Song, 2009a; 2009b).

For those in the study who endorse the trope of chemical imbalance, and the effect of the drug is to regulate the chemicals and establish or reestablish this balance. For example:

*Jerome:* I have a dead part in a part of my brain, so because of that dead part, I don't think normally...

they [drugs] provide chemicals in your brain that will change your thinking... I think they are reacting with other chemicals in my brain to produce more of certain types or less of certain types.

*Katherine:* Well, I think I was born with it. They say you're really born with it, but the chemical imbalance doesn't show up till you're older.... Well, it [the drug] replaces the chemicals in the brain.

*Candace:* It's just like a chemical imbalance. I mean it's just like diabetes. You have to take your insulin and that's that... my brain doesn't make that chemical... I think it keeps some kind of chemical in my brain and it gets the chemicals working.... It's just they give me some kind of chemical that I need.

*Geoffrey:* I guess it works or affects the dopamine in the brain. And if the dopamine is at the wrong level, you can start having symptoms. So I guess it kind of regulates the dopamine in your brain.

*Thomas:* Well, I guess it changes your brain chemistry. I guess your brain chemistry is out of bounds, and it roughly, uh, reconfigures it somehow.

*Delbert:* I don't know. I guess it, um, I guess it works with the juices that are in the brain, you know, the chemicals that are in the brain... maybe it, um, regulates it. Regulates those juices or maybe I might be lacking something... Maybe lacking something that you're supposed to have, like, um, maybe like them endorphins in the brain or something like that.

*Karl:* I think what it does is, I think it interreacts with the chemistry of my brain, and there's like a balancing act going on" (Excerpted from Jenkins, 2015:51).

That said, some narratives emphasize a notion of balance that does not appear related to chemicals per se, and preferred to talk of the drugs' effects in terms of stability and smoothness of moods and states of mind:

*Jordan:* It keeps me balanced. Like a scale, you know.

*Jane:* It smooths my mood.

*Katherine:* My moods have been pretty stable.

*Laszlo:* The more they put me on meds, the worse the seizures got, but I balanced it out with the new medication, Clozaril... It's smoothed and controlled my microprocess... I get bewildered at times and the medication just does its function of keeping me back to the "s" word—stable.

*Mattie:* I know I'm mentally stable enough to get through life right now.

*Felix:* Sometimes it's almost like it can balance out, you know, as bad as the illness is, sometimes I feel pretty good.



*Ellen:* It ain't doin' nothing right now. I can't get level. Shit, I can't get level for NOTHIN'. 'Cause I'm not a level person right now. I'm too many peoples right now. I'm not level.

*Bertha:* It helps me to be stable. And when I don't take it, I can't function. I notice I need it. It keeps me stable.

*Nate:* Uh, stable—not better, but stable” (Excerpted from Jenkins, 2015:51-52).

Through analysis of these narrative examples, I came to understand this subjective experience in relation to what I called “*cultural chemistry*. In this instance, culture is understood as a petri dish for the cultivation of biology, desire, meaning, and social practices” (Jenkins, 2015:31). At issue is not the interaction of molecules and compounds, but the interaction of subjectivities that shapes interpretation of conceptions of illness and medications for their treatment.

In yet other cases, notions of what the problem may be are embedded in supernatural or magical understandings. A forty-one-year-old African American woman, Ruby, took her medication regularly without fail to manage what she was convinced had to be a curse that her step-father had placed on her. She rejected diagnostic terms and the idea of chemical imbalance. She was secure in the knowledge that the problem was by no means one of “schizophrenia,” as her doctor had informed her, but instead an evil “hex” placed on her when she was a small child. She decided that it was not worth her time to talk about this to her treating psychiatrist because this understanding was simply beyond him. In her view, chemical activity was subordinate to divine action, insofar as she said “I just pray about the neurotransmitters” and to God that she can keep a steady supply of the medication. She was convinced that any improvement she had experienced was entirely attributable to God for which she gave daily thanks. In another instance, a Euro-American male participant, Samuel, prayed daily that the “spell” placed on him to be broken and felt that his prayers succeeded both because of the medication and because of his active involvement in prayer: “I pray and when I wake up, it's gone... the spell is gone.”

### 3. Conclusion: Lived experience, structural violence, and global mental health

Living with a diagnosed mental disorder that requires daily psychotropic medications produces a daily anguish. This is due, in large part, by the fact that the drugs do not literally “adjust” a chemical imbalance and cause return to a state of equilibrium. To the contrary, persons take the drugs with the clinical expectation of improvement and management, but not cure. Indeed, within the United States treatment environment, patients are told that they must take drugs for the rest of their lives (Dumit, 2012) to alleviate symptoms and avoid relapse. This paradox of what we called “recovery without cure” (Jenkins and Carpenter-Song, 2008) can produce an existen-

tial state of confusion and despair. This state can occur in the context of other painful experiential paradoxes that involve social stigma, weight gain, sexuality, and perceived personal failure (Jenkins, 2015).

The most important perspective on “chemical imbalance,” of course, is that of persons whose condition it comes to define. In our ethnographic research, we found that despite its currency, the notion is unsatisfactory overall on social, personal, and existential grounds. While chemicals and neurons may be involved, how in the world this could be was nothing short of mysterious to people taking medication. For persons living with serious mental health conditions, the notion of chemical imbalance has no existential purchase and indeed can be meaningless as a matter of subjectivity. There is a struggle for interpretation—to understand a chemical imbalance of the brain and what psychotropic drugs are, what they do, and how they work. With respect to this uncertainty, it is not so different from the views of leading neuroscientists who acknowledge the extent of to which their knowledge is arcane and partial. Behind the notion of chemical imbalance there is a remarkably imprecise and elusive quality of language and interpretation. As a matter of subjectivity, a chemical imbalance is so generalized and vague that the phrase is virtually a throwaway. It explains everything and nothing. More important, it does not take us to the actual experience of participants on medication, or to any bodily feeling of chemical imbalance.

Most mental health professionals would agree that preferred contemporary approaches to treatment combine psychosocial and psycho-pharmaceutical medications. In many emerging global mental health protocols, community health workers are trained to provide a psychoeducational approach with manualized interventions that provide information about the symptoms of a given disease and how to manage these. Kin may or may not be involved to any significant degree. Some family members may wish to participate if they are involved in the life of an ill relative while others may not be in a position to do so for myriad reasons. There are also far too many instances when an ill person is culturally defined not as sick but as a social deviant to be shunned (criminal, drug addict, witch, demon, etc.) and extruded from the community.

In the United States, a wealthy country of extensive impoverishment, a disproportionate number of persons with mental illness are poor. Epidemiological research has demonstrated the significant association between mental illness and poverty (Kessler, Avenevoli, Costello, *et al.*, 2012). This association is particularly pronounced by virtue of entrenched poverty and income inequality in many regions—urban and rural—marked by structural violence. The connection between mental illness and poverty is also produced by the healthcare system as available for the vast majority. To be eligible for receipt of mental health services, particularly for an extended period—months or longer—, poverty is required by the state, while the vast majority of the mentally ill are health are either homeless or incarcerated. Prison systems are legally mandated to provide mental health

services and indeed constitute the largest “provider” nationwide. The common use of cheap first-generation antipsychotics in the U.S. prison system should be considered malpractice by the medical profession since best evidence available indicates that this is less than therapeutic.

While some neuroscientists and psychiatrists have argued that there is some evidence for neuroprotective effects of the serotonin-dopamine antagonists (atypicals), there is also evidence of the neurotoxicity and cell death for the typical medications, such as Haloperidol (Nasrallah and Chen, 2017). This evidence requires serious ethical and therapeutic rethinking of what, on a global scale, can and cannot be constituted as essential medicines. Should drugs that are clinically inferior and neurodevelopmentally harmful be prescribed? Do poorer populations merit evidence-based best standards of intervention or is rationing or inadequacy of care justifiable rationing for those who cannot pay? Such was not thought to be the case for ARTs in the case of HIV-AIDS. Why should it be so for drug protocols utilized for non-communicative diseases such as mental illness?

Finally, prescribing and taking medication is an inherently collaborative process that requires negotiation. Optimal efficacy requires engaged partnership with all

parties involved –patient, provider, kin, community health worker. Useful models for understanding this process have been developed by Partners in Health and the international Hearing Voices Movement. For GMH, thus far we have little to show as fruits of such a collaborative approach. In cases where psychopharmacological treatment is utilized on a global scale, we must move beyond the standard simplistic clinical conviction that the principal problem is patient “compliance” or “adherence” and toward a critique of the medications’ utility and limitations. Such a critique must necessarily consider subjective illness experience, interpretations of the problem, agency, and desired outcomes. When “compliance” or “adherence” is the cornerstone of clinical thinking, there is little doubt that it is also a critical obstacle for patients in resource-poor and affluent settings alike. In fact, the giving and taking of medication is better conceived as a collaborative process of “engagement” (Jenkins, 2015) that only occurs as collaboration where all are active agents. Beyond particular GMH therapeutic techniques and packages, the fields of psychiatry and anthropology in collaboration are in a stronger theoretical position to address questions of mental health in relation to in broader but indispensable existential questions of being human.

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