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How Pharmaceuticals Mask Health and Social Inequity

Enrico G. Castillo, MD, MSHPM and Joel Tupper Braslow, MD, PhD

Abstract

Medications, like all interventions, shape the ways in which physicians see disease, provide care, define successful outcomes, and organize health care systems. Pharmaceuticals make symptoms and biological drug targets more visible while rendering individuals and their social suffering invisible, thereby focusing our profession on the intracellular effects of an unequal society. This article uses psychopharmacology as a probe to trace a more general problem within contemporary medicine: the pervasive influence of biomedical narratives and therapeutic rationales extending from clinical practice, to medical education, to health care finance.

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Introduction

Medications, like all interventions, shape the ways in which physicians see disease and their roles as healers. Across medical specialties, pharmaceuticals influence the way physicians prioritize drug targets and biomedical (ie, biological and physiological) narratives of illness, shape clinical practice and health care systems, and obscure social contexts and interventions. The ubiquitous influence of medications on our understanding of illness and the practice of medicine is often hidden and uninterrogated. We begin by investigating the rise and evolution of psychotropic medications in psychiatry as a case study for examining the pervasive influence of medications on physicians and modern health care. We then reveal this phenomenon to be operating broadly within medical education and health systems financing. We conclude with recommendations for reversing this disturbing trend. This paper does not espouse a repudiation of pharmaceuticals but interrogates the ways they have made symptoms more visible while rendering individuals and their social suffering invisible.

Psychopharmacology in Context

When Nobel Laureate Paul Ehrlich coined the phrase *magic bullet* as he searched for a specific drug to kill the syphilis spirochete in the early 1900s, he expressed our modern ideal of disease and its treatment, in which the disease entity is biologically identifiable

and the treatment directly and specifically targets the pathogen or illness process.[1] For acute infectious diseases, nonbiological factors can be largely bracketed off when choosing an effective treatment. Yet most illnesses, especially chronic ones, pose more complications, as psychological, social, and cultural realities are embedded in pathophysiology and directly shape management decisions and outcomes. The infectious disease model hides contextual factors that are critical for understanding and treating a person's illness.

Psychiatry's growing dependence on psychotropic drugs in the treatment of mental illness is an exemplar of biomedical reductionism and provides an ideal probe into the ways that pharmaceuticals can have unintended and hidden consequences.[2,3] Modern psychopharmacology began with the 1950 synthesis of chlorpromazine.[2] Although chlorpromazine was not expected to be a psychotropic drug, psychiatrists soon discovered that this new agent treated some of the core symptoms of psychotic disorders, such as hallucinations, agitation, and disorganized thinking. Not only did chlorpromazine become one of the first blockbuster drugs of the 20th century, its success led other pharmaceutical companies to produce similar drugs that would later be called antipsychotics.[2]

While psychiatrists readily adopted these new drugs, their use did not necessarily dictate a reductionistic view of psychiatric disease and its treatment. Typically, psychiatrists saw medications as adjuncts to the more fundamental talk and social therapies. This orientation is apparent in an excerpt of a 1955 medical record, in which a state hospital psychiatrist who prescribed chlorpromazine for a young man upon his admission clarified: "The patient appears to be responding to Thorazine, reducing his agitated behavior. This is only an added effect. It is not affecting the components of his illness."[4] The core of the illness was complex, involving unconscious conflicts and family relationships:

> The father appears to be very rigidly and aggressively domineering, and the mother appears to be a warm and loving, but ineffectual, parent. There appears to be a great deal of conscious and unconscious hostility between these parents.... It is possible that the patient is torn between the desire to act out his father's hostility and the desire to be more positive or submissive like his mother. Official Diagnosis: schizophrenic reaction.[4]

Psychoanalytic and psychodynamic thought had reached its zenith in American psychiatry by the early 1960s. In 1962, for example, 90 of 91 medical schools taught students psychodynamic psychotherapy, and 52 of 89 psychiatry departments were led by members of psychoanalytic institutes.[5] As this case illustrates, far from creating a new therapeutic rationale, psychotropic drugs fit easily into existing psychodynamic paradigms in which psychological, familial, and social forces were seen to be as important as biological ones in shaping illness and its outcome.

The dizzyingly rapid emptying of state hospitals from the late 1960s to the end of the 20th century is seen by some as a pharmaceutical triumph, proving that psychiatric illness had been traced to its biological roots, enabling recovery in the community.[6] Historical analysis, however, shows that drugs played, at best, a secondary role in deinstitutionalization.[7] From the mid-1960s, state hospital closures were driven by fiscal crises of state governments, the passage of Medicaid and Medicare, and ideological beliefs about community care.[7] This sequence of events, not medications, propelled deinstitutionalization. Moreover, the push to empty state hospitals and shift care into the community, accompanied by fiscal pressures to quell psychotic symptoms rapidly

with few of the promised resources of the 1963 Community Mental Health Act, compelled the rise of psychotropic medications as psychiatrists' primary treatment modality.[8]

Biological Reductionism

Historical misattribution of deinstitutionalization to the emergence of psychotropic drugs provides a window on a larger transformation of American medicine in which our therapeutics—largely in the form of pharmaceuticals and biologics—have come to define our understanding of illness. In 1976, sociologist Nicholas Jewson described the evolution of medicine from "bedside," to "hospital," to "laboratory" medicine, with the subject of the physician's focus moving from the whole person, to anatomic structures that manifest disease, to cell complexes, respectively.[9,10] Reflecting this evolution, schizophrenia came to be understood as an excess of dopamine, and depression, as famously described by Tipper Gore, as a deficiency of serotonin, "like [your brain] running out of gas."[11] Biologically reductionistic illness narratives emphasize intracellular processes and drug targets and hide from view the complex, intersecting levels of disease causation, illness experience, and outcomes that are as much social as biological. None of this is to deny the often lifesaving importance that our biological therapeutics provide, yet this transformation of American medicine, reinforced by medical education, is so thorough that it can be difficult to see.

Medical schools dedicate semesters to organ systems and understanding the pharmaceutical mechanisms of action on intracellular targets but, in general, dedicate relatively little time to teaching students about the cities in which they live and the ways in which local laws and social conditions create inequitable burdens of illness and death.[12] When the social world is included in illness models, as in the allostatic load model of chronic stress[13] or the 2-hit model of tumorigenesis,[14] it is funneled into broad categories of psychosocial and environmental stressors that activate neuroendocrine or transcriptional regulation of genes, respectively, directing physicians' gaze intracellularly instead of to the social world itself.[13,14,15] Similarly, the Centers for Disease Control and Prevention's report on the 10 leading causes of death in the United States lists only 2 causes of death, suicide and unintentional injury, without clear biological targets.[16] Missing from this list are social forces, laws, institutions, and the environment, demonstrating how thoroughly causes of death and health are understood to reside within the body, within cells. This sidelining of the social world or its translation into targets for drug intervention strips away the specificity of our patients' sociopolitical contexts and demonstrates contemporary medicine's obsession with mitigating the intracellular effects of an unequal society.[10,16]

Health Systems Financing

Biological therapeutics have come not only to define our understanding of illness and treatment, but also to be encoded in our medical economy, circumscribing physicians' work and health care systems' priorities. Medical reimbursement constructs, such as medical necessity determinations, Current Procedural Terminology (CPT®) codes, and relative value units (RVU), imbue biomedical interventions with monetary value while marginalizing "cognitive" visits that involve complex social interventions to address patients' social determinants of health.[17,18] Within these rubrics, for example, the act of prescribing a medication defines moderate-to-high medical decision-making complexity, which in turn justifies higher financial reimbursement.[19] By contrast, social determinants of health are recorded using Z codes, which are a group of codes for the "factors influencing health status and contact with health services,"[20] within the *International*

Classification of Diseases, Tenth Revision.[21,22] These Z codes are assigned zero monetary value.[21,22] A subsidiary industry of physician conferences, medical billing specialists, and undergraduate and graduate medical curricula have been developed to teach physicians how to code to maximize reimbursement, with little reflection on the biological narratives that shape this economy.[23,24,25]

Medical necessity determinations, CPT and Z codes, and RVUs elevate, incentivize, and monetize biomedical expertise and interventions, which in turn shape the everyday work of physicians and health care systems.[26] Physicians confronted with patients' complex social needs face financial pressures that are in conflict with their desire to engage in the complexity of their patients' sociostructural lives, despite the profound effect such engagement would have on illness trajectories.[13] The financial constructs above do not reward physicians for tackling the fundamental sociostructural causes of illness, such as housing and environmental policies, by advocating for social change, despite the impact that advocacy would have on health inequity at a public health level.[27]

Alternative models for health care system organization and funding exist that elevate social interventions, including some value-based care models, integrated budgets across health care and social services, and social prescribing models, to name a few examples.[28,29,30,31,32,33,34] These demonstrate the promise of structural reforms that reinforce multidimensional conceptualizations of illness, treatment, and physician labor in addressing social inequity.

Reform

The belief (especially among psychiatrists) that antipsychotic drugs emptied the state hospitals helped make that historical moment more palatable. As the narrative went, state hospital closures were ushered in by scientific advancements. The quick cures that were envisioned, unfortunately, have not come to fruition, nor have pharmaceuticals comprehensively addressed the needs of patients leaving state hospitals, contributing to social inequity in the form of homelessness and the reinstitutionalization of people with mental illness in jails and prisons.[35] To reiterate, pharmaceuticals and biomedical narratives of illness have made symptoms more visible and individuals and their social suffering invisible, but countering this trend requires more than a simple call for humanism in medicine.[36]

As physicians, we have obligations to ensure that our narratives reflect the realities of our patients' illnesses, rather than reinforcing just-so stories constructed from political and economic exigencies of health care systems' profit maximization and American neoliberal tendencies toward free-market capitalism, reduced government spending, privatization of public services, deregulation, and a hyperfocus on individual responsibility. The reality of our patients' health, at the population level, has been shown to be driven more by socioeconomic contexts (eg, income, neighborhood safety) and the physical environment (eg, pollution, housing conditions) than by health care access and quality.[37] Multidimensional narratives that highlight the social and environmental causes of illness demand that health care systems and financial structures incentivize and support social interventions, recognizing the profound effect of unmet social needs on our patients' health.[28,29,30,31,32,33,34] Such narratives also call on physicians to develop new skills to ameliorate the laws, policies, institutions, and systems (both within and outside of health care) that make our patients sick and are at the root of health and social inequity.[27]

Medical education reforms can be a starting point for this renegotiation of physician expertise.[11] We must insert structural competency, health equity, and social responsibility into medical care and ourselves into sociopolitical movements, in humble allyship with community leaders and for the benefit of our most vulnerable patients.[12] To guide such reforms, we can look to leaders like those in the Student National Medical Association who put forward a detailed "Petition for Racial Justice in Academic Medicine and Research," which calls for a thorough integration of structural competency, anti-oppression, and antiracism in medical curricula and urges reforms to support Black, Indigenous, and other minoritized professionals in medicine.[38] Alongside other social medicine and medical education researchers, these student leaders recognize that medical education without "structural or socioecologic context inevitably reinforces an inadequate and detrimental understanding of how to best treat our patients" and that "individuals and institutions—including academic medicine and research—perpetuate systems of inequality" that in turn fuel health and social inequity.[38]

To counteract biomedical reductionism, we must embrace, as medical historian Jeremy Greene and physician Joseph Loscalzo describe, a multidimensional (biological, psychological, social, environmental, political, and historical) understanding of illness and illness causation.[10] As individual physicians, we must develop the skills to activate social resources to address the root causes of our patients' suffering, and our health care systems must adopt structural reforms (eg, reforming physician reimbursement) and cross-sector partnerships to support this work. As adequate social safety nets do not exist in many American communities, physicians must also learn the skills of advocacy, and structural action must be built into our job descriptions and the everyday work of our institutions.[39,40] This historical moment has revealed that our vision of disease and treatment, if it is to reflect our patients' realities, requires a new engagement with our patients—one that makes individuals and their sociopolitical and psychological lives more visible and that places the physician in partnership with communities to address social needs and heal injustices.

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Enrico G. Castillo, MD, MSHPM is an assistant professor in the Jane and Terry Semel Institute for Neuroscience and Human Behavior in the David Geffen School of Medicine at the University of California, Los Angeles, where he is also a faculty member in the Center for Social Medicine and Humanities, the faculty lead of a faculty-resident collaborative focused on health equity and promoting careers in public service, and the co-chair of the COVID-19 Health Equity Research and Advisory Committee. In addition, he serves as a psychiatrist in the Los Angeles County Department of Mental Health.

Joel Tupper Braslow, MD, PhD is a professor in the departments of history and psychiatry and biobehavioral sciences at the University of California, Los Angeles, where he is also a faculty member in the Center for Social Medicine and Humanities and the Frances M. O'Malley Endowed Chair in Neuroscience History. His work focuses on the social, cultural, and scientific constitution of therapeutic practices in medicine and psychiatry. He is the author of *Mental Ills and Bodily Cures: Psychiatric Treatment in the First Half of the Twentieth Century* (University of California Press, 1997).

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