Syndemics: Considerations for Interdisciplinary Research

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By

In this short piece, I explore how medical anthropology could be deployed through interdisciplinary collaborations in a way that is both theoretically rich and poised to positively impact health outcomes. In particular, I consider how research agendas focused on improving health care outcomes reveal certain limitations and underlying assumptions within the discipline. What types of methodological shifts might occur if we interrogate those limitations and assumptions? What are some alternatives? To answer these questions, I turn to the concept of "syndemics" as one example of how a human rights approach can transform the way we do anthropology for the betterment of health among the most vulnerable.

AN EXISTENTIAL CHALLENGE

My scholarship has been shaped first and foremost by critical medical anthropology. As a researcher, my work is inspired and galvanized by the discipline's capacity to speak truth to human suffering, diagnose various forms of persistent inequality, and make meaning through theory. However, as a teacher of advanced students in medical anthropology and introductory students in global health, I am often asked how to apply the insights of critical medical anthropology in practical ways. That is, given the discipline's commitment to uncover – and critique – faulty health systems and detrimental societal structures, what can be done to ensure that these insights are used to improve these systems and structures and promote health for all?

The situation I describe in response to my students' questions leaves them dispirited and aching for something more: biomedical spaces remain largely unimpacted by the insights of anthropology. Indeed, while some medical anthropologists have penetrated these spaces, the rapidly growing field of "applied anthropology" is, thus far, still unfolding on the fringes. Applied anthropologists, often the sole ethnographers among a group of quantitative researchers, may face challenges ensuring that anthropological theory is not subsumed by the biomedical logic of their surroundings.[1] In the face of these challenges, some ethnographers (myself included) earn degrees in professional health fields so as to better

position themselves as mixed-methods researchers. However, despite individual attempts to bridge the gap, the quantitative and qualitative disciplines generally continue to operate in isolation from one another. Furthermore, health care policy and delivery continue to be primarily influenced by quantitative findings.

So what can be done to ensure that the critical, insightful, and valuable conclusions offered by medical anthropology give rise to broad social impact, both including and extending beyond material and experiential differences in our informants' lives? How can medical anthropologists conduct research in a way that not only calls out social inequality but also collaborates with other health scientists in a way that produces actionable knowledge for improving health outcomes?

INTERROGATING REIFIED ASSUMPTIONS

In what follows, I argue that the knowledge we generate as anthropologists would be more meaningful if it contributed to healing, rather than just documenting, critiquing, analyzing, and denouncing harm. First, I argue that in order to maximize impact beyond the discipline, we must turn our gaze inwards and interrogate some of the assumptions embedded in the methods and theories we use, and the forms of knowledge we produce. Medical anthropology's parent discipline, sociocultural anthropology, was originally conceived of as a science conducted by one person (historically, a white man) in a setting that is culturally distinct from that to which he is accustomed. As a result, ethnographic informants have been and often continue to be from marginalized, colonized, and racialized groups. As anthropologists, we strive not to mark the Other in a way that exoticizes, romanticizes, or otherwise distances it from the Self. Indeed, much has been written elsewhere about the ways in which exoticizing, romanticizing, and otherizing informants leads to the [re]inscription of inequality. Here, however, I focus my attention on how the reified notion of anthropological research as a fundamentally individual enterprise (and the assumptions this entails) render mixed-methods research among a team of distinctly trained professionals impossible.

Through the solo practice of ethnography, anthropologists have inadvertently contributed to a long-standing split between medical anthropology as a qualitative science, and the quantitative health sciences. While the field of Science, Technology, and Society (STS) has emerged to uncover relationships between technological science and social systems (often applying a social studies lens to the operations of science itself), its demystification of how positivism comes to be so positive often does little to foment greater engagement between qualitative ways of knowing and quantitative approaches. The underlying assumption

undergirding this disciplinary split is that qualitative and quantitative sciences are in many ways incongruous, since they utilize disparate methodologies and theories. A related assumption is that in order for medical anthropologists to collaborate with professionals trained in positivist science, they must sacrifice some theoretical acuity.

I argue that these three assumptions—that anthropology must be an individual enterprise, that its methodologies and theories are incongruous with positivist science, and that collaboration with positivist scientists would entail sacrificing theoretical edge—are all false. Moreover, I suggest that 'syndemics' is one example of a theoretical-methodological apparatus that requires interdisciplinary collaboration, and in doing so, paves the way for greater health impact.

THE SYNDEMICS CONCEPT

The term "syndemic," first coined by Merrill Singer in the mid-1990s and formally introduced in his 2009 textbook, is a composite of the words 'synergistic' and 'epidemic' (Singer 2009). Central to this concept is the adverse interaction between diseases, the effects of which are exacerbated by social and environmental factors (including but not limited to corporate exploitation, rapid economic transitions, limited health care access, poverty, social trauma and structural violence, human rights violations, wars, and environmental threats such as global warming and environmental degradation). This focus on social conditions is what distinguishes the concept of a syndemic from biomedical terms such as "comorbidity" and "multimorbidity."

In essence, a syndemic occurs when two or more diseases operate synergistically within a specific social context so as to produce an excess disease burden. Further, as Singer and Clair (2003) explain, "A syndemic is a set of intertwined and mutually enhancing epidemics involving disease interactions at the biological level that develop and are sustained in a community/population *because of harmful social conditions and injurious social connections*" (429). That is, synergistic factors do not simply exist in parallel, but are interactive and cumulative. This idea draws attention to the ways in which marginalized individuals suffer simultaneously from both biological and social vulnerabilities. It also sheds light on why diseases have the tendency to cluster by focusing not only the biological interactions, but also the social context (inequality and injustice) that provides an environment in which overall disease burden can multiply.

The concept of syndemics pervades medical anthropology, even though some seminal pieces have not labeled it as such.[2] Syndemics has also gained traction in many other health-related disciplines (public health, epidemiology, medicine, psychology, nursing, oral health, chronic illness

management, infectious disease prevention, sexual and reproductive health, etc.), highlighting instances of consonance among these and medical anthropology, and exposing potential meeting points for interdisciplinary collaboration. For example, the value of the syndemics concept has been acknowledged by the CDC, an organization that conducts epidemiological research in order to provide recommendations with clinical relevance and public health implications. Bobby Milstein (2001) at CDC was quoted by Singer and Clair when he asserted, 'To prevent a syndemic, one must not only prevent or control each disease but also the forces that tie those diseases together' (in Singer and Clair 2003, 425). Furthermore, Medical anthropologist Emily Mendenhall's research on depression and diabetes in different socioeconomic and cultural contexts provides a good example of effective interdisciplinary syndemics research. That is, the corpus of Mendenhall's work interdisciplinary collaborations lend appropriate weight to both qualitative and quantitative methods.

SYNDEMIC DEPRESSION AND DIABETES IN CROSS-CULTURAL CONTEXTS

In a 2016 study published in *Medical Anthropology Quarterly*, Mendenhall argues that social and economic conditions cluster with depression and diabetes in ways that evince biosocial processes—in essence, a syndemic. As Mendenhall writes, "diabetes is not an endpoint, nor is its overlap with depression the sole focus of the relationship as it is with cormorbidity. Rather, depression and diabetes comprise a biosocial feedback loop" (Mendenhall 2016: 465). Thus, she affirms, "syndemics measure how social contexts provide opportunities for such disease interactions to occur" (464). These contexts are place-specific — despite similar population-level trends in the urban United States, India, and South Africa, individual-level experiences of co-occurring diseases in disparate locales are differentially shaped by social, cultural, and economic factors.

Mendenhall's research found that in high-income nations like the United States, diabetes and depression interface among socially and economically marginalized groups. Meanwhile, in low- and middle-income countries—especially in emerging economies undergoing rapid socioeconomic and demographic change—shifting lifestyle patterns among the middle class and working poor have led to marked increases in diabetes, while the affluent experience lower incidence and prevalence of this disease (Popkin et al. 2012). While the increasing incidence of diabetes among middle-class and working-poor populations in South Africa resembles the epidemiological trends occurring in India, the experience of syndemic depression and diabetes among women from Soweto is unique to the South African context (Mendenhall 2015a). Mendenhall's cross-cultural findings emphasize the importance of

examining local social context, both within nations (e.g. among different socioeconomic classes) and between nations, when interpreting the comorbidities.

While Mendenhall's individually-authored article has reached an audience of other medical anthropologists, it is unlikely that many health care providers, policy makers, or public health professionals will be exposed to work published in places such as *Medical Anthropology Quarterly.* However,Mendenhall also published a co-authoredpiece in *The Lancet*, titled "Non-communicable disease syndemics: poverty, depression, and diabetes among low-income populations" (2017). Given *The Lancet*'s broad and more public readership, this article is positioned to reach professionals across the health sciences. Further, Mendenhall's collaboration resulted in a piece that is informed by ethnographic data (presented through clinical vignettes); oriented by the syndemics concept; and backed by statistical comparisons of diabetes-encompassing syndemics unfolding in low-income urban populations across India, Kenya, South Africa, and the United States. The article concludes with specific recommendations for funding institutions, researchers in the health sciences, and health care providers.

Finally, Mendenhall's partnership with Tsai represents the union of "thick" ethnographic methods with equally robust statistical acumen (Tsai, Mendenhall, Trostle, and Kawachi 2017). Tsai previously published elsewhere (Tsai and Venkataramani 2016) on how health researchers have often used inadequate statistical models to test the syndemics concept. Instead, he proposes a multivariate statistical model that includes an interaction term to measure the excess burden of disease produced in a syndemic. Tsai, Mendenhall, Trostle and Kawachi's 2017 article, "Co-occuring epidemics, syndemics, and population health," determined whether existing studies on syndemics pay adequate attention to the excess burden of disease produced by interaction between comorbid diseases. They found that while many studies referenced syndemics, they tended to use "syndemic" as a synonym for "comorbid," thus missing how interaction lies at the center of the syndemics theory. This article is a strong example of the analytical advantages of interdisciplinary collaboration.

FREEDOM FROM A RESTRAINING MODEL

As evident from Mendenhall's work, the syndemics concept illuminates emergent opportunities for collaboration among health-related disciplines since it prompts health researchers to think outside of existing explanatory models. That is, the theory of syndemics presents a useful challenge to existing nosology (the classification of disease), which takes as a point of departure the notion that diseases are distinct entities. This type of

theoretical approach prompts us to recognize that disease, a unit for grouping how and why people get sick, “is not an entity but an explanatory model” (Good 1994, 53).

Critical medical anthropology enacts dialectical thinking in approaches to understanding health (Goodman and Leatherman 2001) when it identifies interconnections between disease prevalence; individuals’ experience of illness(es) and disease(s); and the social, political, economic, and environmental contexts that give rise to ill health. Medical anthropology is positioned to greatly contribute to interdisciplinary syndemics research and therefore promote a more socially conscious medicine. For example, medical anthropologists are trained to select research categories that reflect how the study population self-identifies (i.e. Hispanic vs. Latino, homosexual vs. men who have sex with men, etc.). Furthermore, they can conduct in-depth, semi-structured interviews that allow for the most salient concerns of the study population to emerge. This ethnographic data collection method offers advantages when compared to survey data collection since the latter “leads the informant.” That is, when responding to surveys, respondents are unable to reveal what survey designers did not think to ask. Also, medical anthropologists pay special attention to problematic binaries (i.e. using the national poverty line to code study participants into “impoverished” and “not impoverished” categories without attention to the local cost of living and individual participants’ quality of life). They can thus provide on-the-ground insight that will help their epidemiologist colleagues to design more accurate multivariate models.

This type of interdisciplinary collaboration holds the potential for shaping clinical care. Currently in the United States, there is a movement in health care toward a “patient-centered, whole-person” approach. Given its recognition of the role of social context in shaping diseases, the syndemic approach can provide clinicians with place-based insights for treating “whole people.” Instead of treating multiple, overlapping health conditions one by one or simultaneously, identifying and eliminating *interactions* between different syndemic components can make health delivery more effective and save the patient multiple trips to different providers.

The syndemic approach also stands to modify existing “best practices” in public health by showing how modifying the social and environmental conditions that give rise to ill health can simulateously reduce the prevalence of multiple diseases, and is, thus, a more efficient strategy than attempting to control individual epidemics or treating individual patients. At present, the outcomes orientation of public health prioritizes only certain diseases, eschewing other syndemic factors (co-occuring diseases, and the social and environmental context within which diseases synergistically unfold). For example, billions of dollars are spent on AIDS

research. Most of this research does not focus on co-infections and syndemic interactions. However, by focusing on providing equitable access to health care, clean water, and nutritious food, public health interventions can reduce co-infection of HIV *and* tuberculosis in impoverished settings (Farmer 1999). This shift can also be money-saving, and thus appeal to policy makers concerned with cost-effectiveness. This "upstream" intervention would have an overall lower cost than dealing with "downstream" consequences, such as high prevalence of expensive-to-treat diseases such as HIV.

Syndemics research is necessarily interdisciplinary, and therefore, different types of expertise are needed to fully incorporate all elements of the syndemics concept. Medical anthropological analysis contributes essential knowledge about the unequal social structures that provide the context within which two or more epidemics can interact. This kind of analysis, combined with biopathological, epidemiological, and environmental understandings of disease, could produce a more robust picture of health vulnerabilities and inequities, particularly as they manifest among already marginalized populations. Public health professionals play a crucial role when they develop and deploy multi-layered interventions that are guided by syndemics theory and research findings. Additional 'stakeholders,' including members of civil society and policy makers, must also be included in order to bring about social change—a precondition of improved health from the syndemics perspective. While each of these stakeholders and disciplinary perspectives play an important role, critically applied medical anthropology is integral to the full realization of the sydnemics concept's potential.

CONCLUSION

The concept of syndemics reveals how epidemics interact within specific social and environmental contexts so as to produce an excess burden of disease for vulnerable individuals. The aim of syndemics research is to improve health outcomes for those most affected. In order to reach this objective, and do justice to the multi-layered nature of the theory itself, interdisciplinary collaboration is required. As exemplified by the work of Mendenhall et al (2017), the kinds of knowledge that emerges from collaboration between medical anthropologists and other researchers has the potential to yield powerful analytical and material results, since how we think about disease pathologies shapes how treatment is delivered, interventions are designed, and policies are authored.

I argue that in order to have a greater impact on health outcomes, medical anthropologists must interrogate assumptions embedded in the discipline. That is, assumptions regarding how to do medical anthropologycan be traced to the discipline's origins, but these long-standing methods may

limit the impact medical anthropology research has within health care provision. Furthermore, while some may fear that applied anthropology lacks theoretical richness, the syndemics concept is one theoretical and methodological model that demonstrates how conducting interdisciplinary research can yield heuristic power while also promoting politically engaged scholarship, championing social justice, and deploying action-oriented networks to prompt social change.

The syndemics concept impels each research professional to utilize their unique skill set while coordinating their research through the same harmonizing theory. In essence, a syndemics perspective unifies interdisciplinary methods through a human rights approach to clinical medicine as well as health policy. Underlying is the shared commitment to reversing how health adversities cluster among people who are structurally vulnerable.

Notes

[1] Here I am drawing from my personal experiences working as a consultant for a California clinic, presenting medical anthropology concepts to board members of Kaiser Permanente, and collaborating with medical anthropology faculty at the National Autonomous University of Mexico Medical School.

[2] One example is Farmer's work on the co-infection of HIV and tuberculosis in impoverished settings where people lack access to health care, clean water, and nutritious food (Farmer 1999).

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Rosalynn A. Vega *obtained her PhD from the Joint UC Berkeley & UC San Francisco Program in Medical Anthropology. She is Assistant Professor of Medical Anthropology and Global Health at the University of Texas Rio Grande Valley. Prior to her current appointment, she held a faculty position at the National Autonomous University of Mexico Medical School. Her current research interests include global health, social justice, epigenetics, the human microbiome, mixed-methods research, and syndemics. She has published in English and Spanish in the United States, Latin America, and Europe. Her past publications include* No Alternative: Childbirth, Citizenship, and Indigenous Culture in Mexico *(University of Texas Press 2018) and "Commodifying Indigeneity: How the Humanization of Birth Reinforces racialized inequality in Mexico" (*Medical Anthropology Quarterly *2017).*