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Review article

Anthropological foundations of public health; the case of COVID 19

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ABSTRACT

Objectives: The complex societal spread of COVID-19 in the U.S. indicates a need to recognize sociocultural forces to best understand and respond to the pandemic. This essay describes four principles of anthropology and sister disciplines that underlie the theory and practice of public health.
Methods: Research following anthropological and related approaches is reviewed to provide examples of the four principles from COVID-19 in the U.S.
Results: 1. What counts as sickness, disease, injury, pathology, is fundamentally a matter of historically situated social ideas and values. 2. The ways in which societies are organized is a fundamental source of pathologies and their distributions within societies. 3. Conversely, health conditions can substantially alter the organization of societies. 4. Public health responses are social processes that affect intervention outcomes.
Conclusions: Anthropological approaches are recommended to address several facets of public health practice: problem analysis, intervention design, evaluation, and the public health enterprise itself.

1. Introduction

The global COVID 19 pandemic has caused a national disaster in the United States unprecedented in recent history in magnitude and societal complexity. Despite the availability of extensive resources and renowned agencies devoted to preparedness, protection, and public health, the U.S. response has resulted in remarkably high rates of infection and death in comparison with many other nations, and to severe social and economic disruption. Responses to the pandemic have been enmeshed with political debates and alliances, interagency conflict, and public challenges to science, authority, and legitimacy. Many policies are in question, and much uncertainty remains. In this essay, we describe four anthropological principles that inform the current COVID-19 pandemic and underlie the discipline of public health more broadly.

We define "anthropology" broadly, not requiring that contributors have official training or degrees in the discipline, but that they attend to the perspectives of others, recognize variations in forms of societal organization, and bring understanding of how diverse perspectives and forms of organization of one's own and other populations' deeply affect human life and interaction. Anthropology is a discipline that examines the organization of societies—their political and economic institutions and processes, their industry and labor, their system of laws and justice, their system of health care, and their cultures. A culture includes values on which people base their judgments and decisions, their prescriptions and proscriptions for behavior, their beliefs about the world, including ideas about sickness, its causes, its remedies, and the appropriate behavior of patients and healers, including physicians. Anthropology also examines interactions among societies and cultures whose understandings of and prescriptions for sickness often differ. In addition to being an academic discipline, anthropology is also a practice insofar as scholar/practitioners deploy their discipline in the solution of societal and global problems, including problems in public health.

2. Methods

Four principles of anthropology are summarized and illustrated with examples in the current COVID 19 pandemic.

Four principles of anthropology in public health:

1. Conceptualization and framing sickness: What counts as sickness, disease, injury, pathology, including the International Classification of Diseases (ICD) system, is fundamentally a matter of historically situated social ideas and values.

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2. Social determinants of health (SDOH): The ways in which societies are organized is a fundamental source of pathologies and their distributions within and among societies. Epidemics are social phenomena.
3. Health determination of society (HDOS): With COVID-19, we see vividly how a health condition is radically altering societies, a phenomenon not previously recognized.
4. Responses to public health issues: Public health responses to community pathology are also social processes; in different settings, the forms of organization, rules of decision-making and behavior, and sets of values and principles can differ. Public health practice varies among nations, and, in the U.S., even among states. Public health is commonly a cross-cultural enterprise, even "at home" when practitioners introduce their practices to others who may not share them.

We give examples of each of these principles as evidenced in the current COVID-19 pandemic, and conclude by demonstrating how anthropological frameworks and methods can strengthen public health theory and practice.

3. Results:

Pillar 1. Conceptualization and framing of sickness

Naming COVID-19, Attributing Cause, and Prescribing Remedies

How people conceive of sickness – that is, which events constitute "sickness," what they are labelled, why they occur, and what actions should follow – always arise in a particular historical and cultural context (Singer, 2004). People creatively deploy culturally inherited ideas and images to explain instances of human adversity – whether an individual bout of mental or bodily distress, a community-wide outbreak of disease, or a global-scale health disaster. By using the explanatory "building-blocks" available to them, the members of societies confer order on a dynamic and unsettling situation, engage in a process of coping, and make demands on others for help (Young, 1982; Hoffman et al., 2002).

The building blocks for interpreting sickness commonly vary from one society or social group to the next; sickness may be seen, for instance, as a result of natural processes, divine intervention, moral transgression, or government failure. How people interpret an incident of sickness matters greatly, because explanations implicate remedies and reparations. Interpretations of sickness and health disasters can also be subject to social contestation and political protest, and powerful interests may work to promote a specific explanation and to squelch others, when pursuing their own ends (Button et al., 1999).

The struggle to control the social production of meaning characterizes the controversy over the proper name for the novel pathogen (SARS-CoV-2) causing the coronavirus disease, COVID-19. The US President has spoken repeatedly of the "Chinese Virus," the "Wuhan Virus," the "foreign virus," and "kung flu" (Chiu, 2020; Rogers et al., 2020). Other officials including Secretary of State Mike Pompeo, Sen. Tom Cotton (R-Ark.), and House Minority Leader Kevin McCarthy (R-Calif) have employed similar terms that single out China as the disease source (Itkowitz, 2020; Yam, 2020). Popular Fox News commentators, too, have labeled the disease as a Chinese phenomenon (Chiu, 2020).

Users of terms like "Chinese Coronavirus" argue that such language is common sense. The President has explained his references to China as a geographic matter of fact: the first cases arose in the Chinese city of Wuhan. In defense of the President, some political commentators have also cited the fact that censorship by Beijing hampered the country's response to COVID-19 (Chiu, 2020). The President and others have argued that in pinpointing China as the source of the infection, they are holding that country's leaders accountable to its people, and at the same time, combating a disinformation campaign meant to cast the US military as the cause behind the pandemic (Myers, 2020).

Linking the emerging coronavirus to China is at odds with current public health naming conventions for infectious diseases. In May 2015, the World Health Organization (WHO) issued guidance on best practices for assigning a name to a new human disease: Individuals should apply neutral terms and avoid designations in connection with a specific place, people, or product (World Health Organization, 2015). In a tightly knit world with instantaneous news, dispassionate titles in connection with emerging infectious disease help prevent social offenses, protect markets, and drive solutions. History has shown that the stigma of disease often fosters discrimination, jeopardizes livelihoods from certain commodities, and creates fear in infected people seeking care (Markel and Stern, 2002; Tadros et al., 2010; Stangl et al., 2019).

Some critics maintain that the President uses such language to deflect criticism from the poorly executed US pandemic response and to rally his political supporters. Moreover, they declaim "Chinese Virus" and "Wuhan Virus" as racist and xenophobic terms that harm Chinese Americans (Hoffman et al., 2002). Asian Americans still confront the fact that some people hold a mental image of the average citizen as a white person of European extraction (Liu, 2020). Phrases like "Chinese Coronavirus" rekindle a history of discrimination (Kil, 2012). Reports of shunning, harassment, physical assault, and discrimination towards Asian-Americans, including bullying of children, have increased in the context of racialized political rhetoric concerning the pandemic's cause (Lim, 2020; Kacala and Coffey, 2020).

Certain beliefs can prove deadly. As reported by the hospital's chief medical officer, a 30-year male patient died after attending a "COVID party" and confiding to his nurse that in doing so, he made a mistake (Pietsch, 2020). The man believed that COVID-19 disease was a "hoax," a claim circulating in some traditional and social media outlets (Imhoff and Lamberty, 2020). This tragic death stretches social constructionist theories of sickness to include the problems of misinformation (i.e., information that differs from expert consensus at the time it is shared) and disinformation (ie., deliberately false or misleading information created and/or spread with an instrumental purpose in mind) (Varga and Bode, 2020; Starbird et al., 2020).

The debate over what to call the novel coronavirus follows fractured US politics (Gollust et al., 2020; Rothgerber et al., 2020). How people view threats, calculate risks, and assess what constitutes a worrying sickness or genuine crisis takes shapes in a broader social context: their identity, their values, and the people they trust for health information. The naming and conceptualization of pathology is a powerful determinant of people's behavior and the spread and response to that pathology. Epidemics are social as well as biological phenomena. Recognition of these processes can strengthen public health understanding and response.

Pillar 2. Social determinants of health:

Racism in the US and the inequitable spread of COVID infection, disease, and death.

Racism in the U.S. is a "fundamental cause of inequity," that is, not simply a direct cause, but an underlying cause that itself causes inequity through mechanisms that change over time (Phelan and Link, 2015). Racism rationalizes the differential distribution of societal resources and power to specified populations. One long-term consequence of inequitable distribution is differences in health, as the minority populations are more vulnerable, more exposed to pathogenic processes, and have less access to preventive and remedial measures. COVID 19 has highlighted these processes.

In March and April of 2020, the Pew Research Center conducted two surveys of U.S. adults to ascertain consequences of the COVID pandemic among racial/ethnic populations. More than a quarter (27%) of blacks reported knowing someone who had been hospitalized or who had died from COVID—twice the rate among whites and Hispanics (Lopez et al., 2020). In New York, representative sample antibody studies indicate that 2.5 times as many blacks and Hispanics have been exposed to COVID as have whites (Lewis, 2020). Blacks were 1.2 times as likely as whites to report that they or someone in their household had lost a job or wages due to COVID; Hispanics were 1.6 times as likely (Lopez et al., 2020). Further, blacks were 1.6 times as likely as whites to report having

no financial reserves, Hispanics were 1.5 times as likely. These harms compound each other; having no financial reserve makes job loss worse. Blacks were 1.8 times as likely as whites to report being unable to pay their bills in full; Hispanics were 1.7 times as likely.

Black and Hispanic populations have at once higher rates of unemployment and greater exposure to jobs with high risk of COVID. The U.S. unemployment rate in May 2020 was 13.3%. The white unemployment rate was 12.4%, the black rate was 16.8%, and the Hispanic rate was 17.6% (Stone, 2020). In the time of COVID, low-income, often minority workers must continue to work to support themselves; commonly they must use public transportation, and their occupations, such as nursing and other forms of personal care, frequently involve interpersonal contact. One third of frontline workers are black or Hispanic, compared with 24% of other essential workers. Frontline workers are "employees within essential industries who must physically show up to their jobs" (Tomer and Kane, 2020). Many frontline workers have low wages: "millions of people work as cashiers (making $11.17 per hour), food preparation workers ($11.94 per hour), and home health aides ($12.18 per hour)… 37.3 million workers, or three-quarters of all frontline workers, earn below-average wages." Unemployment among hospital workers in May was only 3.6% (Stone, 2020).

Low-income populations may also live in crowded housing (United States Government Accountability Office, 2020). Opportunities for social distancing may be severely restricted for these workers. Charles Blow notes that "Social Distancing is a Privilege" (Blow, 2020). These populations are thus at greater risk of COVID infection, disease, disease transmission, and death.

The spread of the virus in U.S. society has at least as much to do with the characteristics of the virus itself as with how U.S. society has created divisions such as race and allocated resources and powers differentially to races over time. Like many other health conditions, COVID spreads along these divisions. This perspective is fundamentally anthropological. Epidemiological analysis and public health response to COVID are implausible without it.

Pillar 3. Health Determination of Society

COVID will radically change the way we work.

How societies and their cultures are organized and function powerfully affects how a pathogen spreads within a society; conversely, responses to the virus may reshape a society's structures and belief systems. COVID 19 has manifested such changes in the processes of work in the U.S. and elsewhere—rearrangements that will affect public health, in turn. The long-term consequences will not be known for some time, but plausible trends are already visible:

1. Businesses have changed; many have not survived. New ones have appeared and others will emerge to respond to new opportunities. Employment opportunities have been changing in response—unemployment and employment. Requirements for new work will shape who has access and what educational backgrounds will be needed. Thus who has work and who does not will evolve. What will become of those who are not currently employed or currently employable?
2. For many people, workplaces have already shifted from offices and other workplaces to home. What will become of offices, office complexes, supportive enterprises, and inner cities? How will places of manufacture and production change?
3. Communication has changed dramatically. Much meeting and conference activity takes place by internet media that would not have been possible 30 years ago. It is unlikely that in-person meetings will again become the norm.
4. Commuting and long-distance travel for work have diminished, and the system of transportation will have to adapt.
5. Work arrangements will have to adapt to changes in childcare and systems of education.

COVID 19 has illuminated a powerful force—the Health Determination of Society—that has not been explicitly recognized previously. The societal rearrangements evolving in reaction to COVID 19 and its control will themselves have public health consequences that merit consideration.

Pillar 4. The social organization of public health responses.

Unmasking masks.

In the time of COVID, masks used by the public are ostensibly artifacts made from fabric and cord used to cover the nose and mouth to reduce the likelihood that the wearer will either transmit the virus or be exposed to the virus from someone who is infected. Masks and their wearing are also rich with symbolism and values that powerfully affect their use, non-use, and the perception of use. In the U.S., the symbolism and values associated with masks are remarkably heterogeneous and generate intense discord among population segments:

Political/affiliation—Until recently, the President Trump has deliberately and vociferously defied the public health recommendation of use of masks in public settings, promoted the voluntary nature of mask use, and encouraged resistance. Trump declared, "it is going to be a voluntary thing. You can do it. You don't have to do it. I am choosing not to do it." A CBS News Poll on March 21–23 found that 10% of Democrats trust the President to handle the pandemic effectively, 90% of Republicans; in contrast, 70% of Democrats and 25% of Republicans trust in the WHO (Salvanto et al., 2020). In mid-May, another survey reported similar results (Yermal, 2020). What counts as authority is highly politicized.

Attitudes toward authority – in the U.S., the choice to not use masks is associated with notions of liberty, freedom, oppression, individualism. Congressman Tom McClintock describes "the indefinite and indiscriminate home detention without due process of perfectly healthy people on the pretext that they might catch a contagious disease" as "profoundly un-American" (McClintock, 2020). A placard in a recent demonstration read "Give me liberty or give me COVID 19" (Elliott, 2020). Plausibly in response to the President's messages, "Protesters congregated at the Ohio Statehouse Saturday afternoon with signs and messages likening the restrictions to freedom infringement. Protesters also argued they want the choice of whether they should stay home, go to school or public places" (Web Staff and Johnson, 2020).

Personal identity – Wearing masks is also associated with notions of strength and vulnerability—the non-wearer is strong and defiant and believes he does not need a mask; the wearer is weak and vulnerable and needs protection.

Community – The use of masks is also associated with notions of responsibility, community, family; it is asserted that those who do not wear masks in public exhibit selfishness. When Governor Northam of Virginia announced a statewide mask mandate, he said: "This is a matter of public health. I'm not looking for people to get in trouble by not wearing a mask, but I am looking for people to please do the right thing. I am asking people to respect one another" (Smith, 2020).

Religion – Not wearing masks may also be associated with religious beliefs, e.g., the notion that God will take care of one or that disease and death are in the hands of God and do not need human interference (Zhao, 2020). The President pressured the CDC to withdraw its recommendations on COVID safety in churches because, said Roger Severino, Director of the Department of Health and Human Services' Office for Civil Rights: "Governments have a duty to instruct the public on how to stay safe during this crisis and can absolutely do so without dictating to people how they should worship God" (Goodnough and Haberman, 2020).

Stigma – Wearing a mask may be seen as indicating infection or sickness in the wearer, and the threat of contagion. Such beliefs may lead to the non-use of masks as well as to the avoidance of mask users. The wearing of masks has raised particular concern among black men who fear that their mask wearing may be misperceived and that they may increase their risk of violence.

While the *efficacy* of masks in the interruption of exposure by and of the wearer may be known, this knowledge is only the first step in a public health response that requires extensive *population adoption of*

appropriate mask use. In a nation such as the U.S. with strong, discordant, and highly charged beliefs and values surrounding the use of masks, the successful and widespread implementation of appropriate mask use is a challenging task. It is plausible that a significant portion of the population will remain non-compliant and beyond persuasion, and that the persuasion of others will require messages and measures directed at their particular concerns and hesitations. Understanding of the sociocultural environments of public health audiences is critical for the design of public health interventions.

4. Discussion

Recognition of the anthropological foundations of public health provides opportunities for improved understanding of and response to health problems at community and population levels. The anthropological foundations of public health offer four specific approaches for public health research and practice (Hahn and Inhorn, 2009; Hahn, 1999), as sketched below.

(1) *Anthropology in the analysis of public health problems:* Anthropological methods are available to reveal the cultural belief systems and forms of social organization that underlie and may be used to address public health problem.
(2) *Anthropology in the design of public health interventions:* Understanding the sociocultural environment facilitates the adaptation of public health interventions to local settings, increases local uptake, and is likely to increase effectiveness.
(3) *Anthropology in the evaluation of public health interventions:* A critical stance, informed by comparative perspective, can enable a more thorough and dispassionate assessment of specific public health practices, in terms of risks and benefits.
(4) *Anthropology in the reflexive analysis of public health:* Examining public health institutions themselves can elevate unrecognized internal inconsistencies and barriers to effective work; it can reveal unanticipated consequences of narrowly construed projects.

Anthropological disciplines should be central to public health as are epidemiology, laboratory science, and statistics. The explicit incorporation of anthropological principles into public health research and practice strengthens both.

Authors statement

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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