Voices

What Role Should Race Play in Medicine?

Rather than a risk factor, it's better conceptualized as a risk marker of vulnerability, bias or systemic disadvantage

By Jennifer Tsai on September 12, 2018

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They tell us race is an invention.

That there is more genetic variation between two black people than there is between a black person and a white person. Then they tell us black people have a worse kind

of breast cancer and get more fibroids. And white folk get cystic fibrosis and osteoporosis.

So what's the deal, doctors in the house?
Is race an invention or not?

—Chimamanda Ngozi Adichie, *Americanah*

In 1988, the Joint National Commission (JNC), the leading U.S. authority on management of high blood pressure, added an extra branch to its existing treatment algorithm. The line of its flow chart jutted diagonally to create a small divergence, and from then on, the hypertension world became divided into two populations: "black" and "non-black." The upside-down–Y split its legs to end at different recommendations for medication. American physicians were asked to consult their eyes and judge a patient's race to referee the fitting pharmaceutical.

Across the ocean, this same treatment guideline was adopted in the United Kingdom —with one exception. Where the U.S. algorithm gives no instruction for how to categorize individuals of mixed race, the U.K. inserted an addendum: Biracial patients do not differ from whites, Asian or Chinese patients, and therefore should be treated as non-blacks.

This presents a conundrum for the U.S. clinician: How black is black enough? When confronted with the challenge of race correction in lung-function measurements, another area where such adjustments are deemed necessary, a well-known pulmonologist commented that when it comes to factoring race into medicine, "It's damned if you do, damned if you don't."
In scientific research, race remains a quandary. Some researchers assert that race, as a variable, captures meaningful plots of genetic ancestry—an opportunity to further big dreams like personalized medicine and ethno-pharmacogenomics. Others argue that biologic concepts of race are inextricably yoked to notions of eugenics, bigotry and burden, and decry their continued presence in medical journals. Somewhere in the middle, the inconsistencies of race in medicine perplex and gnaw at uncertain scientists, who are intimidated by the prospect of inescapable damnation.

Yet despite the uncomfortable ambiguities that surround race and medicine, the variable remains present as a well-worn neighbor of scientific inquiry. Race has been, as the eminent sociologist Troy Duster calls it, "buried alive."

Does race impact fertility and heart health? How? Employment and security? To what extent? Hospital care and life expectancy? Through what means? In biomedical literature, race is often operationalized as a risk factor—a biological predisposition that drives different outcomes. But in using the optics of race as a signal of internal composition, scientists ignore how the external visibility of race is itself a sign that invites scrutiny and reveals harm on both historical and institutional levels. Rather than a risk *factor* that predicts disease or disability because of genetic susceptibility, race is better conceptualized as a risk *marker*—of vulnerability, bias or systemic disadvantage.

Credit: Nora Rodriguez

The causes of racial disparities, in health and across society, are numerous and indiscrete. So the question we begin with—Do we or don't we use race in medicine?—is flawed. It is the wrong question to be asking. Instead, we should inquire: How do we use race well?

In medicine today, it is impossible to be a color-blind physician, and not just when it comes to blood pressure or lung function. Notions of racial difference are embedded across every organ system and specialty.

The FRAX tool, an instrument used to predict the risk of osteoporotic fracture, utilizes various metrics based on different global populations. Among 72 national iterations, only the U.S. model is subdivided into four races: "Caucasian," "Black," "Hispanic," and "Asian." Should Chinese patients be evaluated under the Chinese algorithm, or the U.S. Asian standard? What if they're recent immigrants? Not-so-recent immigrants? And if there are 11 standards for countries in Asia, why and how are these measures collapsed into a single instrument for "Asians" who live in the United States?

In nephrology, measures of kidney function are automatically multiplied by a factor of 1.212 if the patient is "African-American." Many scientific researchers hypothesize that this correction adjusts for greater muscle mass in black people. So why not examine muscle mass directly, instead of using race as an unreliable proxy? Why manipulate the lab results of an underweight, 90-year-old black woman, and not a white bodybuilder who bulges brawn and smells of protein powder? Interestingly, this race correction is not routinized for children. In nephrology, patients need not be racialized until they turn 18.

The American College of Cardiology's cardiovascular disease Risk Estimator—a clinical tool that helps doctors decide if patients should start anti-cholesterol medication—adjusts its recommendation depending on whether the patient sitting on the examination table is "African-American," "White," or "Other." From measures of lung functionto diagnostic thresholds for diabetes, dosage of anti-psychotic medication to frequency of STI screening, doctors can't escape using race—even if they never think about why.

These examples, along with even a short perusal of biomedical literature, demonstrate that researchers are inconsistent with their paradigms of race. While some delineate racial difference through "black/non-black" or "white/non-white," others substitute permutations of other labels such as "African-American," "African," "Caucasian" or "European." In other instances, ethnicities are co-opted to represent

race (Ashkenazi Jewish, Pima Indian) as are nationalities and regional identitis (Hong Kong, German). Consider, for example, how "Native American"—a single U.S. racial category—collapses over 500 distinct tribes that lived across a geographic area the size of Europe. If "European" isn't a racial category, should "Native American" be?

Other questions arise. Are all Europeans white? Are Arab people "Caucasian"? Are Africans the same as African-Americans? As "black"? And how do these racial categories and clinical conclusions translate to hospitals and research centers in places like South Africa and Brazil, where physicians use completely different sets of racial labels? Researchers might shrug and offer, "You know what I mean."

But I don't.

The applicability of data drawn from these studies and the resulting implications for medical practice get even more muddled when researchers fail to explain what they mean by "race." This happens often. A sampling of over 300 genetic studies published between 2001 and 2004 found that not one article explicitly defined its use of the term. Fewer than 10 percent of the articles contained any discussion of how racial labels were assigned. Race, as anthropologist Janet Shim argues, has become such a part of "standard operating procedure" that it continues to seep uncontested, unquestioned and undefined throughout biomedical literature.

In medicine, race is often portrayed as physiological and innate. This reifies race as a genetic variable. Race, whatever it is, trickles its character into bridging blood vessels. It tangles in the kidney, convenes in the marrow, sleeps in the walls of the heart. With this characterization, race is imagined as genome-deep and inherent—an essential aspect of the body that cannot be temporized by external forces.

But racial categories are dynamic designations that continue to be redefined. Racial categories in the U.S. census, for example, have changed every decade since 1790. "Mulatto"—a now derogatory term—didn't disappear from official government forms until 1930. Though the signifier denoted biracial individuals with one white parent and one black parent, it was grouped—along with any individual with even "one drop" of black blood—in the category with black populations. At several points in U.S. history, Hispanic and Latino populations were considered white. During other time

periods, Irish families were not. This is what is meant when anthropologists proclaim that race is a social construct. Such extensive evidence disrupts the notion that race is scientific, static, natural and innate.
Genetic variation across geographic loci is continuous—like a color spectrum or gradient—though medical literature often communicates race as immutable—like clearly separated colors. Research demonstrates that genetic differences are higher within racial groups than between racial groups—that two black patients sitting in the waiting room will have less genetic overlap with each other than with their white, Asian, or Hispanic neighbors. And while ancestral alleles can impact rates of disease and pharmaceutical metabolism, these alleles do not align neatly with reductive racial categories often employed to represent geographic origin.

On top of that, health disparities—like disparities in education, incarceration and employment—are engineered from a great number of social inequalities that disproportionately impact certain groups. While African-American women fight to endure appalling rates of maternal mortality, white men are most likely to die from opioid overdose. These are not biological predispositions.

Here in Boston, a distance of less than a mile can mean a difference in life expectancy of 25 years. That's how old I am.

In October, my mom will turn 59—the life expectancy of residents living in Roxbury. This number is lower than the average lifespan of adults living in Cambodia, Gambia and Iraq. Meanwhile, American citizens living in the neighboring census tract can expect to live to my grandmother's age—86. You don't have to be a Massachusetts native to guess which one of those neighborhoods has a greater percentage of people of color and poverty.

In the Emergency Department, a broken bone stirring below black skin is half as likely to receive adequate pain management as one wrapped in white skin. Across different medical issues, and among adults and children alike, patients of color are significantly less likely to be prescribed opioid medications. This disparity widens as the reported severity of pain *increases*.

Two years ago, a study demonstrated that a majority of medical residents believe that black skin is thicker. A substantial number believed that black nerve endings are less sensitive to pain.

The existence of racial disparities in pain management *is* an issue of racial difference. Black patients really are getting less pain medication, and yes, *because* of their race. But this has nothing to do with genetic susceptibility. Such racial logic fuels stereotypes that feed inequity.

At the same time, we cannot fix or even articulate the problem of pain management disparities without paying strict attention to skin color. Erasing race from medical practice and research would allow this racial inequality to continue unidentified and unchecked. We're damned if we don't examine race in the hospital.

So how do we use race well?

Race should not be used as a proxy for genetics, ancestry, culture or behavior, but it is meaningful within the context of inequality. Race is enhanced as a descriptor when it is mobilized as a marker of potential risks drawn from external inequities and assumptions, rather than as a risk factor that is innately responsible for poorer health outcomes.

This doesn't mean that race might not capture some aspect of genetic ancestry. But right now, the framing of race as an essential genetic variable dominates the biomedical landscape. It is so woven into medical frames of understanding that it's assumed to be the main player when it comes to rationalizing racial difference. Without clear definitions or explicit hypotheses, the authority of the race-as-genes artifact propagates with such power that it obscures other explanations—even despite clear evidence that undermines its supremacy as a major cause of society's racial disparities. A report in 2010 found that single white women between the ages of 36 and 49 have a median wealth of $42,600. At a time when the wealth of a comparable woman of color is just $5, we need to pin health disparities on much more than just genes.

In scientific research, race remains a black-box concept. It can be imagined as a processing plant that swallows inputs and spits forth outcomes, though the alchemy that happens in the interim remains obscure. If we are going to use race well, then it has to be considered for the whole jumble of things that it is. Race has to be identified and treated like a controversy, not just assumed to be mostly genetic with extraneous social inputs that can be controlled for. That approach assumes the mystery of the black box can be partitioned, even if it cannot be cracked open. That biology, society and their complex interactions can be sliced separate so that the "noise" of social context can be muted. But these planes of delineation do not exist. Health is a collaborative exchange of genes and environment. Even the best of surgeons don't know where to cut.

Drifting behind the dense opacity of racial labels, animated and very alive, is a teeming factory of squirming participants that interact to weave racial differences. The outputs that arrive on the other side of the black box—epidemiological patterns and health disparities—have to have their origins investigated with the full weight of inquiry. These outcomes are not merely racial differences caused by innate variation. They are racial inequities driven by injustice. Race itself does not cause disease. But racism, a disease of this country, certainly does.

Often, biomedical researchers only theorize explanations that involve biological mechanisms at the level of the individual body, which erases the involvement of policy, inequality and infrastructure that impact populations at large. They assume they'll find a genetic mutation, but ignore zip code, measure hormone levels, and gloss over tides of incarceration. In failing to provide the due diligence required to sincerely scrutinize the other contents of the black box, they further position genes as the favored answer. The preoccupation with race feeds itself.

More than 75 percent of medical students report feeling inadequately prepared to address race in medicine. Confronted with a dizzying array of racialized protocols and research guidelines, they might be wondering the same thing as Adichie. What's the deal, doctors in the house? Is race an invention or not?

Race, like other important topics in medicine—including gender, sex, sexuality and disability—requires a level of training and comprehension that is much more nuanced

than a simple direction: “Do I, or don’t I?” The issue is thick with controversy and it cannot be reduced to a single question or even a single story.

If, as Troy Duster says, race is not only buried, but buried *alive* in the cornerstones of medicine,then we have to start digging. These excavations—through history, political economy, geography and beyond—must advance with a clear line of sight to social context in order to disrupt the reductive nature of race labels as they are used today. We have a responsibility to diversify our institutions and scholarly perspectives in the march towards better clinical practice.

Do or don’t be damned.

The views expressed are those of the author(s) and are not necessarily those of Scientific American.

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