The Medicalization of Race: Scientific Legitimization of a Flawed Social Construct

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The term "race" has many definitions, ranging from a family unit to a species, but in common and medical usage, defining "race" has meant separating *Homo sapiens* into three to six groups. This division of *Homo sapiens* into race taxons started in the 18th century, when the sciences of genetics and evolutionary biology were not yet invented. These disciplines have since shown that human race taxonomy has no scientific basis. Race categories are social constructs, that is, concepts created from prevailing social perceptions without scientific evidence. Despite modern proof that race is arbitrary biological fiction, racial taxons are still used widely in medical teaching, practice, and research. Human diversity is inconsistently taught in medical schools and erratically presented in medical texts. Race taxons have been "medicalized"; that is, race groupings have been legitimized by their use in medical literature and practice as acceptable descriptive labels that are integral to the proper diagnosis and treatment of disease in humans. Assumptions about disease that are made because a race has been assigned can result in important negative consequences for individual patients and inaccurate genetic inferences for populations.

In contrast, ethnicity is a concept that incorporates social, religious, linguistic, dietary, and other variables to identify individual persons and populations. Ethnicity may be able to impart clinical clues to diagnosis if the clinician taking the history is well informed and open minded. Ethnic boundaries are dynamic and imprecise, and a strict methodical approach to ethnicity that is equal to the approach required for the study of other variables is necessary if the concept of ethnicity is to be clinically useful.

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Use of race as a way to classify large divisions of *Homo sapiens* originated with Carl von Linne (Linnaeus) (1). Johann Blumenbach (2) was the first to use the word "race," and use of this word has remained largely unchanged in common and medical contexts. Von Linne, the Swedish taxonomist and botanist, was the first to place humans in a taxonomy of animals, in his *Systema Naturae* in 1758. He divided humans into four main groups on the basis of physical and psychological impressions: Europeans, who were "fair ... gentle, acute, inventive ... governed by laws"; Americans, who were "copper-coloured ... obstinate, content free ... regulated by customs"; Asiatics, who were "sooty ... severe, haughty, covetous ... governed by opinions"; and Africans, who were "black ... crafty, indolent, negligent ... governed by caprice" (1).

Blumenbach (2), the German anthropologist and anatomist, first used the word "race" in 1775 to classify humans into five divisions: Caucasian, Mongolian, Ethiopian, American, and Malay. Blumenbach also coined the term "Caucasian" because he believed that the Caucasus region of Asia Minor produced "the most beautiful race of men" (2). Both von Linne and Blumenbach stated that humans are one species, and the latter remarked on the arbitrary nature of his proposed categories (2).

These men were products and producers of the prejudices of their era, but it is remarkable how similar the concept and categories of race remain today, even after it has been widely documented that phenotypic and biochemical variations do not correlate simply with genotypic differences (3–5).

Current Definitions of Race

Interpretation of the word "race" as it applies to groups of persons is inconsistent, and the definition of this term depends on the motive of the person using it. The Oxford English Dictionary (6) acknowledges the imprecision of delimiting race, and it lists five definitions that range from a group as small as a family to a group as large as a species.

Most anthropologists have come to the conclusion that "race" is not a useful term (7):

> The term race, as applied to human types, is vague. It can have a biological significance only when a race represents a uniform, closely inbred group, in which all family lines are alike—as in pure breeds of domesticated animals. These conditions are never realized in human types and impossible in large populations [8]. As a folk concept, race is employed to attribute not only physical characteristics but also psychological and moral ones to members of given categories, thus justifying or naturalizing a discriminatory system [9].

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Race is therefore an unscientific social construct; that is, the concept of race is created from prevailing social perceptions and is without scientific foundation. The last definition given alludes to the destructive idea of race, which has fueled racist and eugenic movements with allegedly scientific claims of racial superiority and inferiority.

Anywhere from 30 to several hundred human races, defined using anthropologic criteria, have been proposed (10, 11). Although this complex classification system is not commonly used in the media or in medicine, many persons have intuitively adopted the anthropologic definition of race; in the 1990 U.S. Census, nearly 300 "races" were volunteered (12). Indeed, this broader interpretation of race conforms more to the definition of an ethnic group, which is a group "of people within a cultural system who desire or are given special status based on traits such as religion, culture, language, or appearance" (13).

Medical Use of Race

The medical literature incorporates such racial terms as white, Caucasian, Anglo, and European; black, colored, Negro, and African; oriental, Mongoloid, and Asian; Indian and Native American; and Hispanic and South American. These terms are examined individually for accuracy and relevance.

The words "white" and "black" are used extensively to describe particular races of people, despite the general banishment of red, yellow, and brown as crude groupings by perceived skin color. The classifying of persons by color is unscientific, because it constitutes the subjective labeling of a complexion hue that can be adaptively or environmentally altered (14). In addition, human complexions do not fit a primary color scheme. No person is absolutely white or black or any other color; even albinos have a hue that results from the presence of pigments other than melanin. Rather, complexion hues can be characterized as ranging from very light to very dark, and complexions vary widely witnin each racial group. For these reasons, grouping by skin color has no scientific meaning when the result of the grouping is construed as either a race or ethnicity.

The terms "Caucasian" and "Mongoloid" are sometimes used to imply an ideal race form, that is, a form that exemplifies a grouping. However, ideal forms are not recognized as a legitimate way to describe people because of the wide phenotypic variation that occurs even in small groups (15). In this sense, the term "Negro" has been used to describe persons from Africa, Asia, and parts of Europe (16). The terms "Anglo" and "Hispanic" refer to populations that primarily speak English and Spanish, respectively. Linguistic groupings cannot qualify as races or even as ethnic groups (unless the language is absolutely culture-specific). Most linguistic groups contain many different ethnic groups (17). "Oriental" means from the east; this definition is relative and has no fixed focus. "Indian" or "Native American," as applied to persons indigenous to the Americas, includes hundreds of groups with different cultures, languages, diets, and risks for disease. "Asian," "African," "American," and "European" are geographic terms that encompass hundreds of diverse ethnic groups and are too broad to be medically significant.

Although the modern terms may carry slightly different meanings, present-day medicine often uses the three to six racial classifications described by the original taxonomists. Unfortunately, the continued appearance of race taxons in the medical literature has legitimized them as acceptable descriptive labels for patients and has thus made them seem integral to the proper diagnosis and treatment of disease.

Ample scientific evidence repudiates the use of social constructs of race. Scientists and medical workers should know that most variation occurs between individual persons. It is estimated that 85% of all possible human genetic variation occurs between two persons from the same ethnic group, 8% occurs between tribes or nations, and 7% occurs between the so-called major races (18). Only 0.012% of the variation between humans in total genetic material can be attributed to differences in race, although many diseases are linked without proof to this small amount of diversity (19).

Despite the large amount of published research that has used race taxons, these groups have rarely been defined in that literature (20). When taxons are defined, their deficiencies, such as the miscounting and misclassification of these arbitrary groups, are often exposed (21).

Definitions of race in general medical reference works vary considerably and include declarations based on genetic groupings, such as "a group of animals or individuals within a species which has common somatic inherited characteristics" (22) or "a breed or strain of a species" (23). A medical dictionary (13) defines a race as "a distinct ethnic group characterized by traits that are transmitted through the offspring." A medical encyclopedia (24) gives a firm statement about the scientific irrelevance of the term, calling it "a vague, unscientific term for a group of genetically related people who share some physical traits."

What are medical students taught about human diversity during their preclinical courses (courses on genetics and physical diagnosis, for example) and clinical years? One genetics textbook (25) specifies three major racial groups; another does not mention

race (26). However, in the definitive genetic reference work by McKusick (27), all diseases are discussed in the context of family groups, ethnic groups, or geographic ranges. One physical diagnosis text (28) lists race as an identifying factor without specifying what race is; another text (29) lists race but claims that it is self-explanatory; and a third text (30) lists color as identifying information, referring to the anachronistic chromatic classification of black, white, yellow, red, and brown. A recent text (31) holds to a forsworn anthropometric definition, calling race "a physical, not a cultural, differentiator based on a common hereditary, using as identifiers characteristics such as skin color, head shape, and stature." Yet another physical diagnosis text (32) advises obtaining the so-called ethnic extraction of the patient, but it provides no guidelines on how to do this. A different text (33) includes an important chapter on the cultural interpretation of disease. Some texts eliminate race altogether as identifying information (34, 35).

In clinical medicine, race taxons are frequently used during rounds, in medical records and journals (36), and in clinical research (19). An example is a physician who presents a patient's case history at the bedside and assigns the patient a racial identity in front of the patient and members of the health team. The patient is thereby objectified into an arbitrary race category, without consultation, which may result in alienation of the patient from the health care team ("They think they know who I am, but aren't really interested in me"). In addition, a physician's assumptions about a patient's race that result in the elimination of possible diseases or the narrowing of focus to one disease in the differential diagnosis may have serious negative consequences. The following case reports testify to this unfortunate phenomenon:

Case 1: An 8-year-old boy, phenotypically European, presented with acute abdominal pain and anemia (hematocrit, 0.21). Although his body temperature was only 37.9 °C, surgery was considered. A technician found red corpuscles with hemolytic characteristics on a smear. Surgery was canceled after the results of a subsequent sickle preparation were found to be positive, and the child was treated for previously undiagnosed sickle cell anemia. His parents were from Grenada and were of Indian, northern European, and Mediterranean ancestry.

Case 2: A 24-year-old man, who was classified as black during the medical history, presented with progressive upper abdominal pain for 24 hours and was found to have a hematocrit of 0.22. He stated that a doctor once told him he had "sickle cell," but he had never been hospitalized and had never needed treatment. The patient was admitted for management of sickle cell crisis, and two packed red blood cell units were transfused during the ensuing 24 hours. The next morning, the patient had a witnessed cardiac arrest and was intubated immediately. During intubation, bright red blood was suctioned out of the pharynx and esophagus but oxygenation remained excellent. The patient could not be resuscitated despite a 75-minute advanced cardiac life support effort. His hematocrit at the time of the code was 0.13, and he had exsanguinated from a bleeding peptic ulcer. Sickle-cell trait or disease was not confirmed.

Many authors of published studies have used racial taxonomies from which they have drawn genetic inferences without providing information about the potentially confounding risk factors associated with occupation, income, housing, nutrition, pollution, racism, and other variables that may adversely affect health (20, 37). Inferences about a particular ethnic group are often extrapolated to a host of ethnic groups perceived to be in the same particular race. Biological reductionism from this kind of intrinsic race bias in research has resulted in inaccurate inferences and needless suffering (38–40).

Ethnic Identification—Is It Viable?

Some publications about genetic or epidemiologic links to disease already contain far more information about familial or ethnic influences on disease than they do about the relation between race and disease (27, 41). Other published studies ignore or reject the notion of race and operate using the concepts of ethnic group and geographic region exclusively (5, 42–46). Geneticists and anthropologists have begun to map gene frequencies geographically by using the concept of clines, which may not observe even ethnic-group boundaries.

For medical purposes, a person's ethnicity may impart clinical clues contributing to diagnosis, provided that the person who takes the history is well informed and open minded. These clinical clues include geographic origin and migratory status, housing and employment patterns, dietary preferences, cultural and environmental factors, and genetic ancestry. These variables are found in various intensities in the makeup of different ethnic groups. Some authors contend that ethnicity is a useful proxy for studying differences in populations that may be important in health (19, 47). However, ethnic boundaries are dynamic and imprecise, and it is dangerous to assume that any person possesses a certain health variable just because that person is a member of a particular ethnic group (48, 49). The common thread between ethnicity and race is that both are social constructs and subject to ethnocentric biases (50). Unlike race, ethnicity is understood

to be a social rather than a strictly biological concept, but ethnicity itself involves many social factors. All-encompassing labels of "racial/ethnic groups" are used (51, 52), but these confuse matters because the concepts of "race" and "ethnicity" are not similar (19, 49).

An ethnic history optimally involves grandparental as well as parental origin. Knowledge of a patient's citizenship is not required, because ethnicity often does not follow the political grid of nation-states and citizenship is a poor surrogate for information on residence and travel. In some instances, such as when a patient is treated under jurisdictions that deny care to illegal aliens, asking for a disclosure of citizenship could restrict medical care; questions about nationality under such circumstances would be unethical.

Persons with multiethnic backgrounds are increasing in number and will continue to do so. Predictably, no provision has been made in science or government for the ethnic identification of these persons (20, 21, 53). Multiethnic persons have been forced to choose among groups; frequently, societal pressures place them in groups that have little political power. Many persons in the United States are multiethnic because that country is a nation of immigrants who have intermarried extensively.

Ethnicity is a complex and inexact variable in epidemiologic research (49, 50). If ethnicity is to be clinically useful in medicine, a strict methodologic approach equal to that required for the study of other clinically relevant variables will be necessary (48–50).

Finally, it may even be argued that every variable that makes up ethnicity can be determined independently, thus rendering the global concept of ethnicity obsolete for the health management of individual persons. This view may be too simplistic, however, because ethnicity is an important part of human self-identity. For example, the treatment of disorders in cross-cultural psychiatry may require a deep understanding of the patient's self-identity (including their ethnic identification) for optimal outcome.

Conclusions

Changing the social identifiers of patients from a few unscientific race taxons to a larger and more diverse set of ethnic designations may be more meaningful, but it would probably be unpopular with bureaucrats and researchers. Although race groupings are not biologically or anthropologically relevant (21), some may argue 1) that they should stay intact for the sake of continuity and 2) that ethnic identification is unnecessary and is simply done to achieve political correctness. Evidence from scientific and ethical viewpoints shows that this view is incorrect and that medical interpretations of race fortify popular societal usage. The athlete and scholar Arthur Ashe once contrasted the effect on his life of his ethnicity with that of the acquired immunodeficiency syndrome (AIDS), of which he died. Many were surprised by his statement that "being black is the greatest burden. . . a more onerous burden than AIDS" (54). Institutional racism is common in society and medicine in the United States; arbitrary race grouping is part of such racism. Studies have documented that medical rationing based on ethnicity occurs in the United States (55, 56) and have detailed the ethnic bias that affects the treatment plans of some physicians (57). Such biases are inexcusable in medicine.

Our moral responsibility as health professionals is to invest a physical and mental orientation in each patient that is optimal for maintaining and recovering health. This imperative includes empowering patients to define themselves (and their ethnicities) rather than labeling them according to a social construct that masquerades as scientific fact. At best, such labeling results in alienation; at worst, it causes medical mismanagement.

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Her final illness was mercifully quick, but harrowing. Cancer tore through her body as if it were late for an important meeting with a lot of other successful diseases.

Will Self
The Quantity Theory of Insanity
New York: Vintage; 1991

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