Differences, Disparities, and Biases: Clarifying Racial Variations in Health Care Use

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Studies documenting racial differences in health care use are common in the medical literature. However, observational studies of racial differences in health care use lack a framework for interpreting reports of variations in health care use, leading to various terms, ranging from "variations" to "bias," that suggest different causes, consequences, and, ultimately, remedies for such variations in treatment. We propose criteria to assess racial differences in health care use by using a clinical equity (equal treatment based on equal clinical need) framework. This framework differentiates between initial reports of racial differences and subsequent classifications of their findings as racial disparities or racial bias in health care use. Racial variations in health care use may be considered disparities after demonstrating that racial differences are not attributable to treatment eligibility, clinical contraindications, patient preferences, or confounding by other clinical factors and are associated with adverse consequences. Racial bias with adverse consequences in health care may be inferred if a racial variation in treatment that has been characterized as a disparity persists after accounting for health care system factors (for example, type of hospital at which the patient was treated). We apply this framework to published reports of racial differences in treatment to determine which studies provide evidence of differences, disparities, and bias. We discuss the use of such a framework in directing policy interventions for alleviating inappropriate racial variations in health care use.

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The Institute of Medicine report "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care" (1) documents a troubling pattern of racial differences in health care use and outlines a national program directed at redressing racial differences in health care use. This report parallels other notable federal initiatives, including the creation of a National Center on Minority Health and Health Disparities at the National Institutes of Health (2) and funding for health care disparities research (3). Remedying racial differences in health care use requires a framework in which to interpret reports of racial differences in health care use. However, no such framework exists, and as a consequence, different terms are used to characterize reports of racial differences in treatment. For example, some commentators have interpreted racial differences in health care use as "variations" and have suggested that additional research should assess treatment appropriateness, patient preferences, and outcomes (4, 5). Differences in health care use have also been characterized as "disparities," suggesting shortfalls in treatment (6, 7), while other commentators have stated that racial differences reflect "clear, demonstrable, undeniable evidence of discrimination and racism in our health care system" (8, 9).

Varying interpretations of racial differences in health care use not only are an issue of labels but have important ramifications for future research and policy since they suggest different reasons, consequences, and remedies for these differences. Thus, the various terms reflect, in part, the absence of an explicit set of criteria with which to evaluate reports of racial differences in treatment. Such ambiguity may not only impede understanding of whether treatment differences reflect innocuous variations or clinically significant shortfalls in care but also complicate identifying the root causes of racial variations in treatment and developing appropriate interventions. To address this issue, we propose terminology and criteria that may be used to assess reports of racial differences in health care use.

Health Care Use: Equity, Not Equality

Studies of racial patterns of health care use are often interpreted as suggesting that the group with the lower utilization rate is undertreated. This characterization assumes that equal use is the standard against which to judge racial differences in health care. However, equal use is not an appropriate criterion because it presupposes equal need, preferences, and benefit across racial groups. The equality standard provides no assurance that patients have access to necessary, high-quality health care (10). Indeed, the equality standard would be satisfied in a perverse "race to the bottom" in which all racial groups receive diminished access to health care or similar rates of poorer quality of care. Alternatively, increasing health care use in one group to achieve parity with another assumes that higher rates of health care use will improve patient outcomes, which may not be true (11, 12). Although stated in simplified extremes, these scenarios reflect the logical extension of using the equality standard for evaluating racial differences in health care use.

A framework based on clinical equity provides a more appropriate way to evaluate racial differences in health care. Although no single definition of health care equity is accepted (13), we define an equitable distribution of health care to be one in which clinical need is the primary determinant of equal opportunities for patients to use health care resources (14, 15). Whereas an equality-based standard presents utilization data without context, an equity-based framework assesses racial differences in terms of patient preferences and opportunities for appropriate treatment on the basis of clinical need.

A Framework for Interpreting Racial Differences in Health Care Use

We propose a 3-tiered framework for characterizing racial differences in health care use on the basis of their clinical consequences for patient outcomes and the extent to which they may reflect other patient or health system factors. The 3 tiers are difference, disparity, and bias. All observed variations in health care use by race necessarily meet the criterion for the first level ("difference") in that they reflect a finding of a difference in health care use. These variations in care can be considered "disparities" if the racial difference in health care use reflects shortfalls in appropriate care that cannot be explained by other patient factors and are associated with adverse health consequences. Disparities require remedies, but whether these disparities are the product of health care system factors should be determined first. Patients may disproportionately receive poorer quality of care for reasons other than providers' discriminatory intent, such as a lack of insurance, treatment by poorer-quality health care providers, or financial burdens that influence health care use. Thus, we propose that racial variation in health care that meets the disparity criteria would be classified as evidence of "bias" only after determining that such disparities cannot be explained by health system factors (that is, provider characteristics). In the following sections, we specifically define each tier.

Racial Difference in Health Care Use

Every study reporting racial variations in health care use provides basic documentation of a difference in practice. This variation, however, remains simply a "difference" if the findings cannot be evaluated in terms of appropriateness of treatment, if poorer health because of the difference is not evident, and if the contributions of patient factors other than race have not been considered. For example, early studies of racial differences in procedure use reported that black patients had lower treatment rates than white patients (16–19). However, because these studies did not determine whether such variation reflected inappropriate practice (for example, overuse in one group, underuse in another group, or both) or were associated with poorer outcomes, it was unclear which group, if any, was receiving poorer-quality care. Any reported racial "difference" in health care use should nonetheless prompt further investigation of the veracity, magnitude, source, and clinical importance of the treatment difference, recognizing that further evidence is needed before any variation may be considered a disparity that requires intervention.

Racial Disparity in Health Care Use

A "disparity" in health care use may be considered a difference in appropriate treatment use that is associated with poorer clinical outcomes and is not attributable to patient factors. Although a disparity will most often be investigated because of an observed difference in care, studies that find no crude difference in health care use should still be evaluated against the disparity criteria to ensure that similar crude rates of treatment do not mask different levels of health care need between racial groups.

We propose 5 formal criteria (eligibility, clinical exclusion, preferences, confounding, and consequence) that may be used to determine whether a racial variation in treatment may be classified as a "disparity" in treatment.

First, are the patients eligible for the tests or procedures being evaluated? Because racial groups may vary in their eligibility for different interventions, the observed racial variation must not reflect differences in treatment eligibility.

Second, does the analysis account for treatment contraindications? Racial groups vary in their prevalence of comorbid conditions and severity of disease (20, 21) and thus may have objective clinical contraindications to treatment use.

Third, have patient preferences been considered? Racial groups differ in their preferences for treatment, including choices of different therapeutic options and decisions not to undergo recommended procedures (22). Although the first 2 criteria establish a population in which the clinical value of the treatment is established, accounting for appropriately obtained patient preferences is necessary to ensure variations in treatment do not reflect racial variations in patient decision making.

Fourth, has robust risk adjustment of patient factors, including demographic, clinical, and social characteristics, been performed to ensure that the observed variation is independently associated with race? Because other patient factors (such as hypertension, diabetes, and limited functional status) contribute to variations in treatment, it is necessary to ensure that racial variations are not attributable to confounding by these factors. Although the 3 preceding criteria establish grounds for clinically appropriate treatment that is congruent with patient preferences and thus may be used to determine whether a racial group is being undertreated, accounting for confounding is necessary to ensure that any undertreatment is principally attributable to race and not other patient factors.

Finally, and perhaps most importantly, are racial variations in treatment associated with poorer patient outcomes, including progression of disease, hospitalization, quality of life, or mortality? Health care is provided to improve patients' overall health status (23). From both a clinical and policy perspective, racial variations in health care use that do not result in meaningful decrements in health outcomes are thus moot (24).

A study of racial differences in the use of reperfusion therapy in patients hospitalized with myocardial infarction provides an example of a racial variation in treatment that may be considered a disparity (25). The study contained sufficient data to identify patients who were eligible for treatment, excluded patients with contraindications, accounted for patients' decision not to receive treatment, and

conducted comprehensive patient-based multivariable adjustment. Although the study did not directly assess whether differences in reperfusion therapy use were associated with poorer outcomes, the strong clinical evidence for use of reperfusion therapy implies harm due to a lower rate of treatment. Thus, lower treatment rates for black patients in this study can be considered a disparity because they reflect a shortfall in appropriate care that is not attributable to patient preferences or confounding by other patient factors and would be associated with adverse outcomes. Similar examples may be found in other studies (20).

Although both a disparity and a difference represent a racial variation in health care use, a disparity is of greater consequence because, by accounting for issues of need, preferences, confounding patient factors, and consequences, it indicates represent poorer care for the group with lower rates of treatment. The focus should then shift to considering whether health system factors may contribute to differences in treatment (26).

Racial Bias in Health Care Use

We propose that "racial bias" with adverse consequences reflects the differential provision of appropriate care to patients principally because of their race. Racial bias, although commonly inferred from reports of racial differences in health care use, is difficult to demonstrate directly. Thus, bias is a hypothesis that is strengthened after health system factors are successively eliminated. Of specific concern are issues of access to treatment and health care provider characteristics that may contribute to differential rates of treatment among racial groups. Although these health system factors may have a disparate effect on racial groups that result in racial differences in treatment, their remedy is different from a situation in which patients are being treated differently because of their race. For instance, if a racial disparity in treatment is due to the disproportionate use of low-quality providers by black patients rather than within-provider racial bias, a policy directed at alleviating this disparity might more appropriately focus on improving the quality of care provided by these low-quality providers.

Few observational studies of health care use have contained sufficient information to support a claim of provider bias. A hypothetical study providing evidence of bias would not only contain sufficient information to demonstrate that observed racial differences constituted a disparity but also account for health system factors. Ideally, such a study would assess patients with similar insurance and access to care who were treated at the same center. For example, racial differences in the use of an in-hospital treatment in a cohort of patients treated in a Veterans Affairs hospital may provide evidence of bias (assuming the difference constituted a disparity) by precluding most access-to-care and provider factors.

APPLYING THE FRAMEWORK

Our framework provides criteria with which to interpret racial variations in health care use. It intentionally does not specify what level of evidence or detail is required to satisfy any single criterion because different standards may be used. For example, consideration of patient preferences may span the spectrum from a simple assessment of patients' decision not to have treatment to a more detailed examination of preferences indicating that patients were reluctant to pursue particular treatment pathways during the initiation of their care. Similarly, accounting for confounding by other patient factors may range from simple age- or sex-adjusted analyses to complex multivariable models. Researchers willing to accept lower levels of evidence in their evaluation may find accounting for a simple measure of patients' decision not to have treatment or age adjustment sufficient for meeting the outlined criteria. Interpretation of the magnitude of racial variations will include similar subjectivity, both in relative and absolute terms. What ultimately constitutes a meaningful treatment difference will be decided mostly by the different stages of the framework, the size of any variation, and its potential effect (22, 23). Others may choose to use only a preponderance of our criteria when determining whether a racial difference may be a disparity or indicate bias, although any omitted factor (such as preferences) should be investigated in future studies. Our objective is not to impede interventions until "perfect" levels of evidence are available but rather to ensure that both researchers and policymakers explicitly consider those factors that may contribute to racial differences in health care use and better direct efforts at remedying inappropriate variations. In doing so, we seek to explicitly distinguish among differences, disparities, and bias and thereby ensure that reports of racial differences in treatment are more appropriately characterized.

POLICY IMPLICATIONS

This framework does not suggest that racial differences are meaningful only after bias has been demonstrated. Any racial variation in treatment merits examination to identify its root cause. Our framework seeks to provide practical direction to policy or other interventions by trying to determine the extent to which racial variations in treatment reflect meaningful shortfalls in quality of care and are attributable to race as opposed to other factors. For instance, if a racial variation in treatment reflects the overuse of a therapy by white patients rather than shortfalls in use by black patients (and thus constitutes a difference and not a disparity), a remedy tailored at reducing inappropriate overuse would be more effective than a general effort to increase overall therapy use in black patients. Alternatively, if racial variations reflect a disparity but are attributable to disproportionate treatment at poorer quality centers, the disparity may be eliminated by improving quality at these centers rather than creating a systemwide intervention that

focuses on discrimination by race. Finally, if health system–associated factors do not account for the disparity, a remedy tailored at addressing provider bias may be a more effective response. By addressing root causes, our framework allows interventions to be focused where needed.

In conclusion, we propose that racial variations in health care use may be described as differences, disparities, or bias on the basis of the accounting of treatment need, confounding by other patient factors, patient preferences, linkage of poorer outcomes due to lower rates of treatment, and consideration of other health system factors. Such a framework may more accurately characterize the nature of racial disparities in treatment and identify appropriate targets for remedying inappropriate racial variations in health care. Appropriately interpreting racial differences in treatment should not be confused with accepting poor-quality care. Moreover, disparities are no more acceptable than direct racial bias—in either case, the goal is to eliminate the pattern of care that is disadvantaging particular patients. We believe dispassionate, objective study of those factors underlying racial variations in treatment is a necessary prerequisite to realizing our health care system's commitment to provide high-quality care to all patients, regardless of their race.

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