The Influence of Physicians' Demographic Characteristics and Their Patients' Demographic Characteristics on Physician Practice: Implications for Education and Research

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Abstract

In recent years, interest in improving health care to diverse patient populations has stimulated the development of academic and clinical resources to improve physicians' cultural competence. These efforts have focused on increasing physicians' sensitivity to the roles patients' ethnicity and culture play in health care. However, the influence of physicians' own demographic characteristics on their practice of medicine is an important, yet relatively overlooked, consideration among efforts to improve cross-cultural care. There is a strong presumption in the medical literature that clinicians are neutral operators governed by objective science and are unaffected by personal variables. Yet, there is a body of research that finds physicians' practice patterns are influenced by their own demographic characteristics, and patient care is affected by the demographic concordance or discordance of the physician–patient dyad. The author discusses this existing literature to illustrate the presence and importance of the impact of physicians' demographic characteristics on the care they provide and discusses strategies to mitigate this influence. Greater attention to understanding the way in which physician demographic characteristics influence clinical care using multidisciplinary and multimodal approaches provides an opportunity to improve the quality of medical education and improve the quality and efficacy of medical care.

Acad Med. 2008; 83:100–105.

In recent years, interest in physicians' provision of effective and consistent care to diverse patient populations has stimulated the development of academic and clinical resources to advance physicians' cultural competence.[1,2] These efforts have focused on increasing physicians' awareness of the role that patients' ethnicity and culture play in health care. However, amidst attention to patient demographics, an important reciprocal evaluation—the role of the physician, and, more specifically, the influence of physicians' demographic characteristics on clinical care—has been relatively overlooked.

Historically, physicians have underrecognized the influence of their own demographically based predispositions in medical practice, and the medical literature evidences the presumption that clinicians are neutral operators governed by objective science and are unaffected by personal variables.[3–5] For example, in many studies in which patient ethnicity, race, or gender is found to be a significant variable (but not bioepidemiologically relevant), the demographic characteristics of the treating physicians are not identified. Readers of these reports are left to assume that either these physicians are demographically homogeneous, or that any heterogeneity is not clinically relevant. In fact, the physician workforce is not homogeneous—more than 20% of North American physicians come from ethnic minorities, and more than 25% are women.[6,7] The relevance of physician heterogeneity to patient care is supported by studies discussed below.

Physicians' practice patterns are undoubtedly influenced by demographic factors.[3] Some of this practice variability is attributable to the inherent complexity of the doctor–patient relationship. This relationship is shaped by numerous factors, including the organizational, cultural, and sociopolitical settings in which the interplay transpires.[5] Nevertheless, the study of physicians' preconceptions and biases remains an opportunity for improving the quality of health care and medical education.[8]

Research on demographic variables and clinical practice may be categorized as follows: (1) the influence of patients' demographic characteristics on their health, health practices, and medical care, (2) the way in which physicians' practice is influenced by patient demographics, (3) the way in which physicians' practice is influenced by physicians' demographic characteristics, and (4) the effects of demographic concordance/discordance between patients and physicians on medical care. In this article, I review the latter three categories to explore the way in which physicians' clinical behavior is influenced by physician and patient demographics.

Physicians' Practice and Patients' Demographic Characteristics

Physicians, in their provision of diagnostic, therapeutic, and preventive care, across health care venues and for various types of medical conditions, are influenced by nonmedical attributes of their patients.[9] This influence is reflected in how physicians recommend treatment for, provide preventive care to, and diagnose their patients.

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Treatment

Physicians' tendency to underprescribe to minority patients is found for a variety of medications. Studies on pain management have suggested that physicians are more likely to withhold or underprescribe opioid analgesics to minority patients compared with white ones.[10,11] One study using hypothetical scenarios in which only patient ethnicity was varied found that physicians were less likely to prescribe antiretroviral medication if the HIV-infected patient was described as African American.[12] A clinical study found that physicians tended to prescribe protease inhibitors later in the disease course for African American HIV patients compared with whites.[13] Gender bias in treatment of HIV may account for physicians less-often offering antiretroviral therapy to infected women.[14,15] Evidence exists that some oncologists prescribe relatively lower doses of chemotherapeutic agents (both actual doses and relative dose intensity) to their African American breast cancer patients compared with white patients.[16] A disparity in prescribing is also found in psychiatric care, with African American schizophrenics less likely than whites to receive superior second-generation antipsychotic medications.[17,18]

Physicians' use of cardiac interventions is influenced by patient ethnicity and gender. Physicians' assessments of the importance of cardiac catheterization differed by patient race.[19] Similarly, a U.S. Veterans Administration study found that physicians were less likely to recommend cardiac angiography to African American patients compared with whites.[20] A study using simulated patient encounters found that physicians were less likely to refer African Americans and women for cardiac angiography, and of the study groups, African American women were the least likely to be recommended for this test.[21] Cardiologists may refer female African American patients to cardiac rehabilitation programs less often than white women, and female cardiac patients are less likely to undergo angiography and to receive thrombolytic therapy.[22–24]

Prevention

Patient demographics seem to influence physicians' health counseling, screening tests, and interventions for primary prevention. Physicians are more likely to recommend weight loss to their overweight female patients compared with male patients with comparable body mass index measurements, but they are less likely to counsel female tobacco users on smoking cessation.[25,26] A multicenter study found that health professionals were more likely to counsel African American HIV patients about safer sex practices than whites, and that the preventive counseling provided to HIV-positive patients may be influenced by patients' sexual orientation.[27] Parenthetically, physicians' management of confidential, HIV-related information may be influenced by patient race and gender.[28]

For preventive interventions, physicians may be less likely to recommend mammography and osteoporosis screening to their African American patients.[29,30] Physicians may less intensively pursue modifying cardiac risk factors with their African American patients compared with white patients, even after controlling for other cardiovascular risk factors, socioeconomic status, and insurance.[26,31] Physicians tend to perceive lower cardiac risk for women despite objective cardiac risk profiles comparable with those of men,[32] and they monitor and treat hyperlipidemia less intensively for female patients compared with similarly at-risk males.[33]

Diagnosis

Physicians may be influenced by patients' ethnicity and gender in diagnosing their patients. In one study, physicians were less likely to classify African American women as obese compared with white women, despite comparable anthropomorphic measurements.[34] Nephrologists, asked to review hypothetical case descriptions of various causes of renal failure, were more likely to diagnose hypertensive renal disease in patients described as African American.[35] Two studies of psychiatric care found that psychiatrists were more likely to diagnose African American patients as paranoid schizophrenics.[36,37] Among patients presenting to the hospital for symptoms ultimately proven to be caused by tuberculosis, physicians of female patients were more likely to delay ordering acid-fast bacillus smears.[38] Physicians underdiagnosed chronic obstructive lung disease in hypothetical cases in which patients were reported as female.[39]

Physicians' Demographic Characteristics and the Care Physicians Render

The influence of physicians' personal demographic characteristics on their clinical practice is less well studied, but evident. Interestingly, physicians' practice biases seem to echo the health biases of the groups from which they emanate. For example, nonwhite health professionals, compared with whites, may be less likely to discuss advance directives with their patients,[40] and they may be less likely to refer female patients for mammography.[41] Correspondingly, this pattern is evident among some nonwhite patients, who, according to one study, are less likely to seek out these procedures.[42] Physicians' practice for treatment limitation and end-of-life care also mirrors the preferences of the ethnic groups with which they identify.[43] Expectedly, physicians' preferences for their own treatment influence their estimates of their patients' preferences for treatment.[44]

Physician gender also influences clinical practice. Both male and female primary care physicians report less skill in performing genital-related examinations on patients of the opposite gender, and they report being less comfortable with obtaining sexual histories from these patients.[45] Male physicians are less likely than female physicians to offer their female patients cervical smears and mammograms, and to screen them for domestic violence.[46–48] Female physicians may be more attentive to preventive health and patient counseling, tend to provide office visits of longer duration, are more patient-centered in their communication, and may be more likely to discuss complementary and alternative medications.[49–52]

Male physicians may be more aggressive than are female physicians in approaches to treatment. For example, male physicians are more likely to prescribe newly released medications,[53] male obstetricians are more likely to perform cesarean sections,[54] and patients of male physicians are more likely to undergo cardiac catheterization.[24]

Physicians' religious affinities also affect practice. For example, Catholic or Jewish physicians may be less willing to withdraw life support from their patients than physicians with other religious

beliefs.[55] Physicians without religious affiliation, compared with physicians of any religion, are more likely to participate in voluntary active euthanasia,[56,57] and religion is a predictor of a physician's willingness to perform an abortion.[58]

Demographic Concordance and Discordance

In addition to the evidence that suggests physician demographics and patient demographics independently affect physicians' practice, other research finds that demographic concordance between patient and physician also has influence. For example, African American and Hispanic patients rated their physicians, their medical care, and general satisfaction more highly when their physician was racially concordant.[59,60] Studies of African Americans and whites found that in office visits between concordant physician–patient pairs, the visits themselves were longer and more participatory, indicated health services were more likely to be used, and patients were less likely to delay care.[61,62] Another study suggests that, overall, female patients may be more satisfied with care from gender-concordant physicians.[63]

Physicians may be inclined to prescribe higher doses of narcotic analgesics to patients of like gender.[64] Similarly, a study of white and African American physicians and HIV patients found that antiviral therapy was initiated much earlier in racially concordant pairs.[13] A study using hypothetical patients found that psychiatrists were more likely to assign a diagnosis of paranoid schizophrenia to patients of congruent gender and ethnicity.[36]

Demographically concordant health care pairings may not be entirely arbitrary. Minority patients tend to seek out ethnically concordant health providers, even when adjusting for physicians' language proficiencies.[65–67] Conversely, for physicians, membership in an ethnic minority group is a strong predictor of medical practice among an ethnically concordant population.[68]

Increasing Awareness to Improve Care

Methodologic and other challenges in interpreting the literature notwithstanding,[69,70] there is ample evidence that physicians' clinical practice is influenced by both physicians' and patients' nonclinical attributes. These findings should not be surprising, as McKinlay et al[71] note, "like all human actors, physicians bring to the medical encounter motives and often-unrecognized biases that reflect lifelong socialization in the surrounding culture." Van Ryn[3] nicely schematizes the complexity of the therapeutic dynamic and identifies feedback loops whereby physicians' and patients' beliefs and interpersonal behaviors are mutually (positively or negatively) reinforced. This schema identifies potential opportunities for making the physician contribution to clinical interactions more functional, such as critically evaluating consciously held preconceptions, cultivating greater awareness of unconsciously held beliefs, and training in nonverbal communication and other interpersonal behaviors.

Frequently, discussions about health care disparities include recommendations to expand the pool of ethnic minority physicians. Greater physician workforce diversity may indeed address some concerns about health care disparity, including improving minority access to care and raising levels of cultural awareness among physician peers. Unfortunately, socialization of medical students to the role of health professional may desensitize young white and nonwhite physicians to concerns of minority patients.[72] Additionally, many obstacles exist to nudging physician demographics towards approximating that of the general population. For example, although Americans of Hispanic ethnicity are the most rapidly growing U.S. minority in terms of numbers, India is the source of more international medical graduates practicing in the United States than any other country.[73] Greater ethnic diversity among medical students and resident physicians may stimulate greater self-examination of preconceptions and biases in professional behaviors and interactions. However, even if the numbers of minority physicians were increased, it does not follow that that this would moderate physicians' individually and personally held biases, whether the physician is white or nonwhite.

Pedagogical interventions may be insufficient to increase physicians' awareness of the impact of their own and their patients' demographic characteristics on the care they provide, because decision making is influenced by many factors other than factual information. For example, research suggests that many people consciously hold enlightened beliefs about race while unconsciously maintaining negative beliefs, and physicians may use stereotyping to fill informational gaps in clinical care.[8] Furthermore, as Burgess et al[8] note, "stereotyping and bias is not simply a product of the individual provider but is caused by features of the health care setting that decrease cognitive capacity, such as fatigue, overload, and time pressure."

How else may variability and disparities in health care be reduced? The research findings of benefits to patients in demographically concordant physician–patient dyads are medically and ethically provocative. Possibly, promoting greater physician–patient concordance will improve medical outcomes and patient satisfaction. These advantages may stem from positive effects of stereotyping in which physicians and patients make educated assumptions about shared norms, values, and priorities, and may result in expedited development of the therapeutic relationship. Some stereotyping of patients by physicians is likely unavoidable. The Institute of Medicine, in its report on disparities in health care, notes that "stereotyping is an almost universal human cognitive function" and is "a process by which people use social groups (such as sex and race) to gather, process, and recall information about other people."[74] Of course, stereotyping based on unfair and negative biases is harmful.

Alternatively, promoting physician–patient concordance may produce a series of serious and undesirable effects, including greater societal segregation and xenophobia, and more fragmented care. Patients may demand to receive care from physicians according to ethnic criteria, citing disadvantages in demographically discordant care and leading to an amplification of personally held prejudices. Care of patients in concordant dyads may be compromised particularly should clinicians reflexively presume that individual patients subscribe to the norms of the shared culture. In some concordant dyads, one party may be excessively judgmental

according to a group-particular ideal (e.g., degree of religious observance, abhorrence of certain vices).

Improvements in health care may be better achieved, not through greater demographic concordance but, rather, by advancing demographic transparency, so that any patient may receive individualized care of high quality from any physician. Towards this goal, the advantages of concordant care may offer insight. Granted, it may be difficult, if not impossible for nonconcordant physicians to achieve the immediate familiarity, expedited development of trust, and intuitive and efficient communication that may underlie the benefits of concordant care. Nevertheless, efforts to improve the quality of patient–physician relationships (in terms of communication, participatory decision making, and trust) may translate into better patient adherence to health recommendations and perhaps outcomes.[75]

Education and training should emphasize improving physicians' awareness of their own preconceptions and cultural values, as this in turn will allow for greater openness towards and appreciation of corresponding beliefs of their patients.[60] Medical educators should better address the phenomenon of countertransference, in which the physician emotionally or otherwise subconsciously responds or reacts to behaviors or characteristics of the patient. This likely contributor to treatment variability is neglected in medical education (mental health excepted) and such training may improve clinicians' self-awareness and the quality of their therapeutic relationships.[76–78] Of course, addressing physician bias in health disparities is "uncomfortable and disturbing to medical care researchers and practitioners," but essential nevertheless.[3]

Gender, ethnicity, and cultural factors are just a few the potential barriers to an ideal therapeutic relationship. All of these barriers can be distilled down to one patient and one physician relating to one another, and it is on this interpersonal level that additional opportunities to decrease disparities in care may be found. Additional research is needed to provide a clearer understanding of the influences of physicians' characteristics, beliefs, and behaviors in clinical practice. Empiric study should include all levels of medical education, training, and proficiency assessments, because demographic influences are likely present in students and residents in addition to physicians in practice.[79–82]

An overriding health care objective is to improve the consistency and quality of care rendered by heterogeneous health professionals to even more heterogeneous populations of patients. Towards this end, the study of physicians' demographically mediated clinical behaviors sheds important light on the complexity of this challenge. Further study of physician-based influences from clinical, sociological, and anthropological perspectives should be included among efforts to decrease practice variability and improve health care.

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Did You Know?

In 2006, with funding from the National Institutes of Health, researchers at the University of Pittsburgh found that nicotine exposure at a young age may alter the brain's hard wiring that occurs during adolescence and young adulthood—molecular and metabolic changes in the brain result in nerve cell membrane breakdown, especially in males.

For other important milestones in medical knowledge and practice credited to academic medical centers, visit the "Discoveries and Innovations in Patient Care and Research Database" at (www.aamc.org/innovations).