

Interpersonal Perspectives on Black–White Health Disparities: Social Policy Implications

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There are large and persistent disparities between the health status of Blacks and Whites in the United States. On average, the mental and physical health of Blacks is much poorer than Whites. In this article, we discuss several potential direct causes of Black–White disparities in health status, which include biological or genetic factors, prejudice and related processes, and socioeconomic factors. We also consider how the system-level, patient-level, and provider-level components of healthcare contribute to disparities in health status. We examine in detail the psychological processes associated with patient- and provider-level factors that may produce healthcare disparities. Of particular interest is the potential impact of racial attitudes and stereotypes on provider–patient interactions. Finally, we propose possible directions for future research on health disparities and discuss policy changes that might reduce disparities in health status and healthcare between social groups.

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Today, the average American can expect to live five years longer than a Palestinian—unless that American is a black male, in which case he can expect to die three years sooner. In fact, the average life expectancy for black males is much closer to that of Vietnam, El Salvador and Iraq than it is to the life expectancy of white males in the United States. (Gadson, 2006, p. 488)

This article concerns health disparities. Unfortunately, the term health disparities is somewhat ambiguous; therefore, we begin with the definition of disparities that guides our approach to this social problem. In its landmark report on disparities in healthcare, *The Committee on Understanding and Eliminating Racial and Ethnic Disparities in Healthcare* of the Institute of Medicine (IOM, 2003) defined disparities as “racial or ethnic differences in the quality of healthcare that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention” (p. 4). However, in her recent review article on conceptual issues in the measurement of health disparities, Braveman (2006) provides a broader definition that is much more explicit with regard to the valence attached to health disparities:

Health disparities do not refer to all differences in health. A health disparity is a particular type of difference in health; it is a difference in which disadvantaged social groups—such as the poor, racial/ethnic minorities, women, or other groups who have persistently experienced social disadvantage or discrimination—systematically experience worse health or greater health risks than more advantaged social groups. (p. 167)

Braveman’s definition is consistent with Whitehead’s (1992) argument that health disparities are unfair, unjust, unnecessary, and avoidable. Thus, in the material that follows health disparities refer to something much more than simple differences in the health status or healthcare of different social groups; they are inequities that result from economic, political, social, and psychological processes rather than biological ones.

The social groups in Braveman’s definition can be defined by gender, race/ethnicity, socioeconomic status, disability, age, sexual orientation, or any other characteristic that creates commonality among group members. Almost any social group may experience health disparities, but we focus on disparities in health status and healthcare in the United States between people who self-identify as White or non-Hispanic European–American and people who self-identify as Black or African American (or Afro-Caribbean).¹ Public health officials, academics, and social activists all agree Black–White health disparities is a serious and pervasive health problem (IOM, 2003; U.S. Department of Health and Human Services (DHHS), 2000, 2006).

¹ Following the conventional usage in the research literature in this area, we shall use the term “Black” to describe people who self-identify as Black African-American and Afro Caribbean; and the term “White” to describe people who self-identify as non-Hispanic European-American and Caucasian. Also, as used here, “race” refers to a social construction, not a description of a group’s genetic characteristics.

This article has three sections. The first concerns disparities in health status; the second concerns disparities in healthcare, which many believe is a major cause of disparities in the health status of Blacks and Whites; and the third concerns the implications of the research presented for future research and social policies on health disparities. The first section begins with representative findings on the relative health status of Blacks and of Whites in the United States. The section then discusses in detail three different explanations of why Whites in the United States almost invariably enjoy better physical and mental health than do Blacks. The first of these explanations is one that many social and behavioral scientists might find surprising; it concerns genetic and biologic factors as explanatory variables. Among social and behavioral scientists, race is most commonly viewed as a social construction rather than a meaningful scientific term, and the notion of inherent racial differences of almost any kind is given little credence. This is not the case in medical science, and thus we briefly consider whether genetic and biologic factors do explain differences in the health status of Blacks and Whites. Next, we consider prejudice and related processes (i.e., stereotyping and discrimination) as causes of health disparities. Prejudice and related processes affect the health status of Blacks in two ways. The first is through their impact on the psychological and physical conditions under which Blacks live; the second is through their influence on the quality of healthcare that Blacks receive. However, in the interest of organizational clarity, we defer the latter discussion until the second section of the article. The next cause considered in the first section is socioeconomic factors, which affect the environments in which Blacks live, as well as attitudes and behaviors that directly affect their health status. We conclude the first section by arguing that these three causes, while important, fail to fully explain Black–White disparities in health status and thus we must turn to another cause: disparities in healthcare.

The second section begins with a presentation of disparities in the quality of the healthcare Black and Whites receive, followed by discussions of presumed causes of these disparities. The organization of this section closely follows the report of the IOM Committee (2003), which identified three potential causes of healthcare disparities: health system-level factors, patient-level factors, and provider-level factors. We discuss each of these, but give much more attention to patient- and provider-level factors because we believe differences in medical interactions involving Black patients and those involving White patients play a significant role in healthcare disparities. In this discussion we return to the role of prejudice and related processes as possibly important causes of health disparities.

Black–White Disparities in Health Status

People who self-identify as White are physically and mentally healthier than people who self-identify as Black (National Center for Health Statistics, 2006; U.S. DHHS, 2000, 2006). The average life expectancies for Black men and women

living in the United States are substantially less than for White men and women (National Center for Health Statistics, 2006). Annual mortality rates among Black infants are almost three times as great as among White infants; this difference continues across the life span (National Center for Health Statistics, 2006).

These mortality statistics become more disturbing when placed in a historical context. Not surprisingly, mortality rates among both Blacks and Whites have declined dramatically over the last half-a-century. However, in 1950, the age-adjusted death rate per 100,000 people among Blacks was 1.22 times greater than the death rate among Whites; in 2004, the death rate among Blacks was 1.31 times greater than the rate among Whites. Hence, the absolute mortality rate among Blacks has declined substantially; yet, the disparity relative to Whites has actually increased.

Large Black–White health disparities are also seen in complications associated with pregnancy and childbirth. As noted, the Black infant mortality rate is substantially higher than the White infant mortality rate. The maternal mortality rate among Black women is also substantially greater than among White women, and is essentially invariant across the age of the mother. Although the absolute number of Black and White women who die during childbirth has declined dramatically overall, this disparity has not appreciably diminished in the last 50 years (National Center for Health Statistics, 2006). Irrespective of mother’s educational level, about twice as many (2.1) Black neonates are born with low-birth weight as White neonates (National Center for Health Statistics, 2003).

There are similar patterns of Black–White health disparities in incidence of diseases. The rate of tuberculosis infections among Blacks is approximately eight-to-nine times the incidence among Whites; the incidence of asthma is four-to-six times as high, and the incidences of diabetes and hypertension are about twice as high (Howard University, 2006; U.S. DHHS, 2006).² For all of these diseases, the Black death rates are higher. For the 10 most common types of cancer, Whites have higher 5-year survival rates and lower mortality rates than Blacks (SEER, 2006). These cancer survival/mortality differences remain even when Blacks and Whites are equated on the incidence of each type of cancer and the stage at which the cancer was diagnosed. Finally, Blacks are more likely than Whites to report they are in fair or poor health and to have some limitation of daily activities (National Center for Health Statistics, 2006). Of course, there are health problems where there are no differences, and even a very few instances where the health status of Whites was actually poorer than that of Blacks (e.g., the incidence of migraine headaches, and joint pain) (National Center for Health Statistics, 2006). However, it is generally agreed that disparities in the health status of Blacks and Whites in

² Although, interestingly, this has not always been the case. Humphreys et al. (2007) report that at the beginning of the 20th century the incidence of diabetes among Black civil war veterans was actually lower than among White civil war veterans.

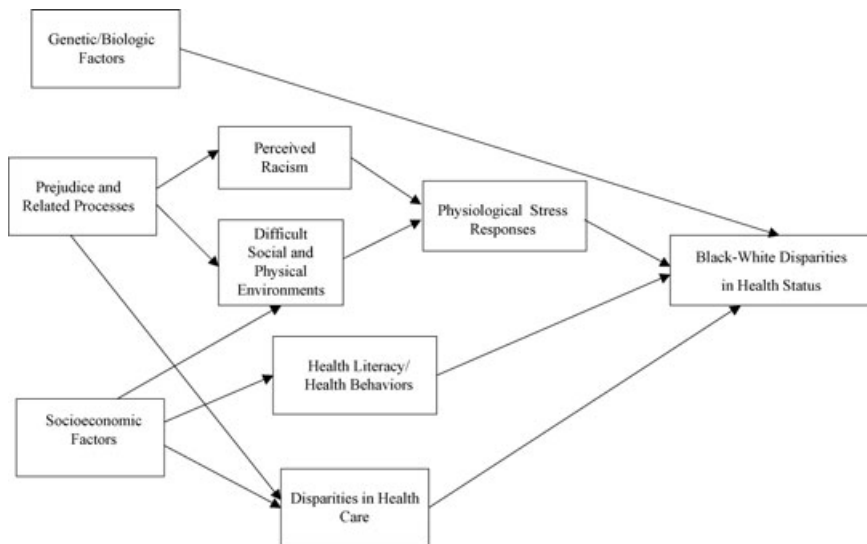


Fig. 1. Causes of Black–White health status disparities.

the United States are large, pervasive, and may even be increasing (U.S. DHHS, 2000; 2006).

The Causes of Health Disparities

In Figure 1, we present a model of the possible sources of Black–White disparities in health status in the United States. This model is preliminary because even this multielement model with several mediated paths may not identify all the possible causes of health disparities. The model identifies four *primary* causes: genetic/biologic factors, prejudice and related processes, socioeconomic factors, and disparities in healthcare. The first three are exogenous causes and are examined in some detail in this section. Healthcare disparities is an endogenous cause and is discussed in detail in the next section.

Genetic/Biologic Factors

The first causal factor presented in the model is Genetic/Biologic Factors. Whereas race is likely viewed by most readers of this journal as a social construction rather than a meaningful scientific term, and the importance assigned to genetic differences between people classified as Black or as White is assumed to be minimal, this is not necessarily the case among people who study the

genetics of disease. Some population geneticists and medical researchers believe such variables are a significant source of differences in relative health status of Blacks and Whites. Thus, unlike all the other paths that we will be discussing in Figure 1, this path from the cause to Black–White Health Status Disparities is direct and not mediated by other variables.

These researchers' basic argument is as follows: People inherit some degree of genetic susceptibility to various diseases. Blacks and Whites come from different genetic populations and thus have different genetic admixtures (i.e., the percentage of genes that come from various populations, such as African ancestry or Northern European ancestry). Therefore, some of the Black–White differences in health status have genetic origins. For example, Huntington's disease is only found among Whites, and sickle cell anemia most commonly afflicts people of African and Mediterranean ancestry. Similarly, some population geneticists propose there are some cancers (and other diseases) for which differences in incidence across populations may be explained by differences in genetic admixtures. Prostate cancer, for example, is much more common among Black men than among White men; breast cancer is somewhat less common among Black women than among White women (SEER, 2005).

In considering this cause, we believe the critical issue is not whether genetic factors play any role in Black–White differences in health status, because clearly they do. Rather, the issue is how much variance in these differences is explained solely by genetic factors. We believe placing too much emphasis on simple genetic explanations of Black–White differences in health status, rather than partitioning the variance among potential causes and looking for interactions among these causes, can have some very negative consequences.

One such consequence is that it may lead some people to grossly misuse the colloquial concept of race (Williams & Collins, 1995). A racial phenotype (e.g., the color of a person's skin) or a social construction of a person's race (what "race" others believe the person to be) is, at best, a rather imperfect proxy for the person's actual genetic population admixture (Gower, Fernandez, Beasley, Shriver, & Goran, 2003). Further, the genetic overlap (or similarity) among people from the major genetic populations is quite high worldwide (Rosenberg, Li, Ward, & Pritchard, 2003), and even higher in the United States, where there has been far more admixing than in the populations studied by Rosenberg et al. (2003). Thus, the notion that people can be placed into discrete, mutually exclusive, categories on the basis of their race has little, if any, scientific validity or meaning. We are not arguing that physicians should ignore a patient's genetic population or family history when considering the etiology of a disease or deciding on a treatment; rather, we are arguing for an intelligent, informed understanding of what a person's "race" really represents.

A second, potentially even more negative consequence is the failure to recognize that the prognosis, even for illnesses that have strong genetic components,

can be greatly affected by environmental factors and disparate treatments. For example, in a meta-analysis of studies that involved almost 200,000 patients and the most common cancers (many of which have clear biological and genetic causes), Bach and colleagues (Bach et al., 2002) found that when Black cancer patients and White cancer patients were equated on the quality of treatment and general health, Black–White differences in survival rates all but disappeared. Despite such findings, a large number of people in the medical community still use genetic differences between Blacks and Whites as a sole explanation for differences in health status. As Williams and Collins (1995) pointed out, “medicine and epidemiology have been slower (than other disciplines) in rejecting . . . now scientifically discredited biological view(s) of race” (p. 370). (This may have implications for the quality of the healthcare Blacks and Whites receive, but that discussion is deferred until the next section of the article.)

In sum, we are arguing that biological or genetic factors as causes of Black–White health disparities need to be placed in the proper context. Health status, like almost any human characteristic, reflects the complex interplay between genes and environment; to identify either one of them as the unitary or even dominant cause may be a dangerous oversimplification of how genes express themselves in a complex environment.

Prejudice and Related Processes

The second factor identified in the model is Prejudice and Related Processes. This term includes racial attitudes, stereotypes, and discrimination; however, in this section, we are primarily concerned with the effects of attitudes and discrimination. More specifically, we discuss the direct impact of prejudice and/or discrimination (which, for brevity, we will call racism) on the physical and psychological well-being of Blacks.

The first path in the model is from Prejudice-Related Processes to Perceived Racism (i.e., the perception that one has been the target of negative attitudes and/or negative behaviors because of one’s race), which in turn leads to Physiological Stress Responses, and from there to Black–White Disparities in Health Status. For the moment, we will defer the discussion of the stress responses and focus on research regarding the relation between perceived racism and both physical and mental health problems. Meta-analyses of this research literature (e.g., Williams, Neighbors, & Jackson, 2003) provide strong evidence of a positive relationship between the belief or perception that one has been the target of racism and mental and physical health problems. The mental health problems studied included psychological distress (Williams, Yu, Jackson, & Anderson, 1997), depression (e.g., Borrell, Kiefe, Williams, Diez-Roux, & Gordon-Larsen, 2006) and anxiety disorders (e.g., Kessler, Mickelson, & Williams, 1999). The physical health problems included poorer overall health (both self-reports and third-party reports)

(Williams et al., 1997), breast cancer (Taylor et al., 2007), high blood pressure (Guyl, Matthews, & Bromberger, 2001), and increased tobacco use (Landrine & Klonoff, 2000). Among pregnant Black women, perceived racism was associated with increased likelihood of preterm delivery and low-birth weight deliveries (Mustillo et al., 2004).

Also shown in Figure 1 is a second and related path, in which Prejudice and Related Processes result in Blacks living in Difficult Social and Physical Environments (e.g., socially isolated environments or segregated housing), which has serious negative health consequences for the residents of these areas (Everson-Rose & Lewis, 2005). Again, we briefly defer the discussion of the physiological mediators and discuss research on this relation.

This is a very complex research literature, which is much more the purview of epidemiologists than social psychologists, but the following summary statements seem appropriate. Racial segregation, per se, does not have a consistent negative relation with health status (Robert & Ruel, 2006; Subramanian, Acevedo-Garcia, & Osypuk, 2005); however, living in poor or disadvantaged neighborhoods does show such a relation. For example, Diez-Roux et al. (2001) found that residents of disadvantaged neighborhoods had higher risk of coronary heart disease than residents of advantaged neighborhoods, even after they controlled for education, income, and occupation. Similarly, Cozier et al. (2007) reported that, even after controlling for medical risk factors, the lower the median values of Black women's homes, the higher the incidence of hypertension.

Next, we return to the mediational link—the process underlying the connection—between perceived racism and health status. It has been proposed that Blacks who perceive themselves to be targets of racism have physiological responses to this experience (e.g., elevated blood pressure and heart rate, production of biochemical reactions, hypervigilance, sleep disorders, and increased fatigue) that create chronic stress on their system, which increases the probability of physical and mental disease and even mortality (Mays, Cochran, & Barnes, 2007; Thomas, Bardwell, Ancoli-Israel, & Dimsdale, 2006). In trying to explain why this occurs, Mays et al. (2007) and others (e.g., Clark, Anderson, Clark, & Williams, 1999) propose that people respond to prejudice and discrimination as they do to any threatening stimuli, and that this reaction increases the allostatic load on the body. Over time, these chronic demands wear down the body's regulatory systems, thereby increasing individuals' susceptibility to disease. A similar argument is made for the physiological effects of being forced to live in difficult social/physical environments.

Although this explanation has a great deal of intuitive appeal, it has been difficult to establish a definitive causal link between perceived racism and physiological stress responses (see Brown, Matthews, Bromberger, & Chang, 2006; Clark & Gochett, 2006; Williams et al., 2003). Nonetheless, the consistency of findings across the large number of high-quality field studies (see Mays et al.,

2007; Williams et al., 2003) makes a strong case for the deleterious health effects that occur when Blacks *perceive* they have been the target of racism (see Thomas et al., 2006). Thus, prejudice and related processes likely contribute to Black–White Health Disparities via this path.

Note that in Figure 1 there is a second major path involving Prejudice and Related Processes that goes to Disparities in Healthcare. This path represents the IOM Committee’s conclusion that prejudice and stereotyping result in differences in the quality of the healthcare Blacks and Whites receive (IOM, 2003). We discuss this path in the second section of the article.

Socioeconomic Factors

The next cause presented in Figure 1 is Socioeconomic Factors (SES). Regardless how one measures SES (i.e., education, income, occupational prestige, or some combination of the three), the lower individuals are on an index of SES, the poorer their mental and physical health (Fiscella & Williams, 2004). For example, the age-adjusted annual death rate due to disease among people with at least some college education is less than half of that for people who did not complete high school (National Center for Health Statistics, 2006). Further, there is substantial evidence that SES predicts health status, rather than the reverse (Williams & Collins, 1995).

In the United States, SES strongly covaries with ethnicity. As a group, Blacks are poorer, have less education, are less likely to be employed, and if employed, more likely to hold lower-status jobs than Whites (IOM, 2003). Thus, it is argued that the socioeconomic disparities between Blacks and Whites are responsible for a significant portion of the disparities between the two groups’ health status.

As indicated by the mediational variables in Figure 1, socioeconomic variables can have multiple effects on people’s health status. The first path is from Socioeconomic Factors to Difficult Social and Physical Environments, which, as we have already discussed, have negative consequences for people’s health (Mays et al., 2007; Stuber, Galea, Ahern, Blaney, & Fuller, 2003). The figure also contains a path from Socioeconomic Factors to Health Literacy and Health Behaviors. People with less education are likely to have health literacy and, perhaps because of this, are less aware of appropriate disease prevention behaviors (Sentell & Halpin, 2006). This may explain why, for example, Blacks are much more likely than Whites to be unaware of the symptoms of a stroke (Keppel, in press).

Socioeconomic factors are clearly an important source of health status disparities, but like genetic factors, their impact on Black–White health disparities must be placed in context. When differences in SES are statistically controlled, large Black–White disparities in health status still remain. For example, in a recent study of mortality rates, an excess of 38,000 deaths per year among Blacks was found even after equating Blacks and Whites in the United States on education

and income levels (Franks, Muennig, Lubetkin, & Jia, 2006). Pamuk, Makuk, Heck, Reuben, and Lochner (1998) used data from national surveys to compare the percentage of Blacks and of Whites at four income levels (“poor,” “near poor,” “middle income,” “high income”) who reported their health was only “poor” or “fair.” As income increased, so did the quality of self-reported health, but within the same income levels Blacks consistently reported poorer health than did Whites (also see Brandon, Isaac, & LaVeist, 2005). Taken together, these findings suggest that if we stop with just the factors considered so far, we will miss some significant causes of Black–White health disparities. This brings us to healthcare disparities as a major cause of Black–White disparities in health status.

Black–White Disparities in Healthcare

The IOM Committee concluded that the major proximal cause of disparities in the health status of Blacks and Whites was that, on average, Blacks in the United States receive substantially poorer healthcare than do Whites (IOM, 2003; U.S. DHHS, 2000, 2006). In this section, we first summarize the kinds of findings that led the IOM Committee (2003) to this conclusion, and then turn to the question: Why does the quality of healthcare received by Blacks and Whites differ?

Contemporary Healthcare

The legacy of racism. In the United States, there is a long history of racist medical theories and racism in medical care. Polygenism, the theory that human races were separate biological species, has a very long history in medical science and strongly influenced medical research in the United States from, at least, the early 17th century until perhaps the early 20th century (Byrd & Clayton, 2000). One likely example is the infamous Tuskegee experiments, conducted by the United States Public Health Service, in which large numbers of Black men were denied effective treatments for syphilis for almost 30 years (Jones, 1993). These studies were designed to evaluate syphilis in Blacks, and were based on the premise that the long-term progression of syphilis and its effects on the nervous system would be different among Black men than among White men.

In the 18th and 19th centuries in the United States, government-sponsored healthcare programs were a fraction of what they are today and were almost exclusively for Whites; government-sponsored healthcare programs for Blacks were essentially nonexistent. The only thing that even approximated an organized healthcare system for Blacks was the primitive and rudimentary healthcare slave owners provided to their slaves. After the Civil War ended and slavery was abolished, this marginal system disappeared and Blacks were largely left without any

public healthcare system. The situation was so severe that some scholars of the time predicted extinction for Blacks in the United States (Byrd & Clayton, 2000, 2002). One major contributor to the poor health status of Blacks was the scarcity of Black physicians. Blacks were excluded from admission to predominantly White medical schools and received training at the few historically Black institutions that offered medical training. In 1905, only about 15% of the 1,500 Black physicians in the United States were trained at White institutions. In passing, we note Blacks were refused membership in the American Medical Association until 1968 (Byrd & Clayton, 2002).

The public healthcare system in the United States expanded in the early 20th century. However, it was still much smaller than it is today, and did not experience major sustained growth until after World War II. Through most of the last century, the few publicly funded healthcare facilities that did exist were segregated. Public health facilities that served Whites received much more funding than those that served Blacks (Byrd & Clayton, 2002). It was not until the mid 1960s that the original Medicare and Medicaid bills were passed, eliminating formal and statutory segregation in healthcare.

Healthcare today. There is no longer any legal or statutory basis for unequal or discriminatory healthcare practices. Indeed, there are legal remedies for individuals and groups who demonstrate they have suffered as the result of such practices. Furthermore, among healthcare professionals, there is now strong explicit normative pressure against providing Blacks (and other ethnic/racial minorities) with less access to healthcare and/or lower quality medical treatment compared to Whites, and considerable overt support for nondiscriminatory practices in the delivery of health services. Most physicians strongly disavow the notion that patient race/ethnicity plays any role in their decisions about treatment (e.g., Lurie et al., 2005).

Despite these self-perceptions, over the past 10 to 15 years, a number of systematic and comprehensive reviews of the healthcare system in the United States have concluded that large disparities exist in the access to and quality of both primary and specialized medical care delivered to Black patients compared to White patients (e.g., Fincher et al., 2004; IOM, 2003). For example, Lee, Gehlbach, Hosmer, and Baker (1997) used insurance claims data to compare the medical care provided to a national sample of Black and White Medicare beneficiaries. To control for differences in provider access and regional practice patterns, the groups were matched on place of residence. Despite equivalent insurance coverage for the two groups (i.e., they were all receiving Medicare benefits), Blacks received much less costly and intensive medical care than Whites. Similarly, Harris, Andrews, and Elixhauser (1997) reviewed over 1.7 million hospital discharge abstracts and found that Blacks were significantly less likely than Whites to receive a major therapeutic procedure in almost half the diseases studied, even after controlling

for patient age, health insurance, and hospital type. These studies are not unusual. Although there are instances of null results, when a study does find Black–White differences in the quality or quantity of healthcare, Blacks are without exception the disadvantaged group. Some specific examples of these disparities in healthcare follow.

Disparities have been found in almost every aspect of care for coronary heart disease and appear to have changed little over time (Vaccarino et al., 2005). Relative to Whites, Blacks are less likely to be seen by a coronary specialist, less likely to be prescribed appropriate preventive and emergency medications for their heart disease, and less likely to receive surgical procedures intended to remedy various types of coronary heart disease (e.g., Fincher et al., 2004).

The treatment of cancer provides even more evidence of Black–White disparities in healthcare. Black men are significantly less likely to receive screening tests for prostate cancer than White men (Etzioni, Berry, Legler, & Shaw, 2002); this difference remains when SES is controlled. Shavers and her colleagues (Shavers et al., 2004a) found that Black patients were significantly less likely than White patients to receive active treatment for suspected prostate cancer. Underwood and colleagues (2004) examined racial differences in treatments as a function of the grade of the prostate cancer. They found no racial differences in treatment among patients with lower-grade prostate cancers, but found that among patients with higher-grade (and potentially more fatal) prostate cancers, Whites were substantially more likely to receive so-called “definitive treatments” (e.g., a radical prostatectomy) than Blacks.

Prostate cancer is not the only cancer where Blacks are treated differently from Whites. Steyerberg, Earle, Nevill, and Weeks (2005) found that Black patients diagnosed with esophageal cancer were about three-quarters as likely to see a surgeon as Whites; among those who saw a surgeon, Blacks were less than half as likely to receive surgery as Whites. These differences were not due to socioeconomic status, and were only partially explained by differences in patients’ medical condition or cancer. In another study, Bach, Cramer, Warren, and Begg (1999) found that Blacks diagnosed with the same kind of lung cancer as Whites were 12% less likely than Whites to receive the recommended surgery; this difference largely explained variation in Black–White survival rates from this cancer.

We could present Black–White disparities in healthcare for several other diseases, and the patterns would not change. As the IOM Committee (2003) reported, “Evidence of racial and ethnic disparities in health care is with few exceptions remarkably consistent across a range of illnesses and health-care services” (p. 5). The IOM Committee identified three likely causes of these disparities in healthcare: Health System-Level Factors, Patient-Level Factors, and Provider-Level Factors. These causes are presented in Figure 2 and discussed in detail below.

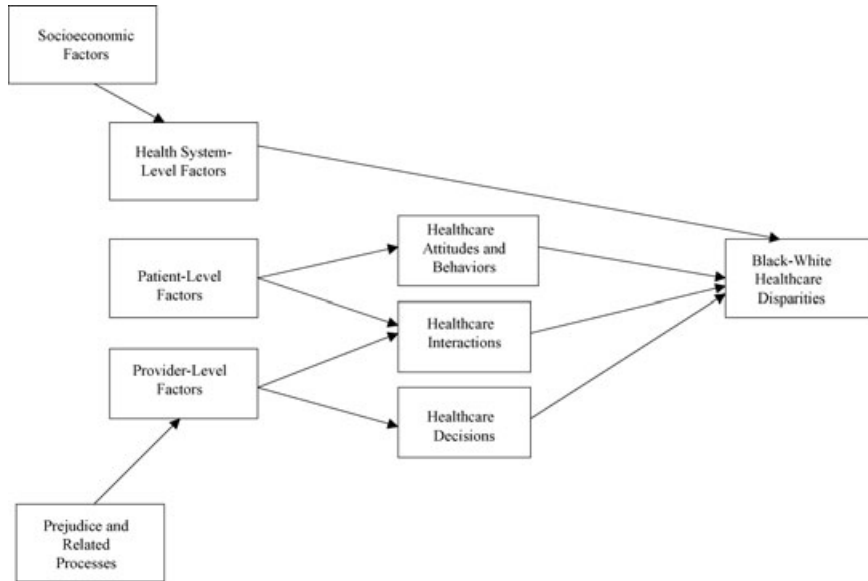


Fig. 2. Causes of Black–White healthcare disparities.

Health System-Level Factors

Figure 2 begins with a causal path from Socioeconomic Factors to Health System-Level Factors, reflecting the fact that economic variables play an important role in the way healthcare is administered and delivered in the United States. The Healthcare Systems used by Blacks and Whites may differ in the following respects: the quality of health insurance coverage and/or health plan; the amount of bureaucracy encountered in order to obtain certain types of medical care; quantity and quality of medical services available in a geographic area; and overall quality of healthcare provided at specific medical facilities. These and similar kinds of differences, in turn, would contribute to Black–White Healthcare Disparities.

The most obvious way in which socioeconomic variables affect healthcare system variables is through the fairly strong linear relation between a family’s financial resources and the quality of healthcare they receive (IOM, 2003). In the United States, healthcare must be paid for by someone, and, in most instances, the best healthcare is provided when the payer is a private health plan (IOM, 2003). With regards to Black–White healthcare disparities, 71% of Whites are covered by such plans, while only 54% of Blacks are similarly covered (National Center for Health Statistics, 2006).

Socioeconomic factors may also affect healthcare in subtle yet significant ways. For example, Barnato, Lucas, Stagner, Wennberg, and Chandra (2005)

examined whether the types of hospitals that Blacks and Whites use might account for some of the disparities in the treatment of acute myocardial infarction (AMI). Using a sample of over 140,000 Medicare patients, Barnato et al. (2005) found that “Blacks went to hospitals that had lower rates of evidence-based medical treatments, higher rates of cardiac procedures, and worse risk-adjusted mortality after AMI” (p. 303).

Thus, system-level factors may place Blacks at a healthcare disadvantage relative to Whites. Again, however, we have an instance where a factor provides only a partial explanation of health disparity, and needs to be placed in context. Numerous studies find disparities in health status exist even when Blacks and Whites have the same insurance plans and use the same healthcare systems and medical facilities (IOM, 2003). For example, Trivedi, Zaslaysky, Schneider, and Ayanian (2006) examined whether the quality of patients’ health plans or their race/ethnicity was a better predictor of the patients’ health status. They examined the health records of over 430,000 patients with chronic diseases, who were enrolled in 151 different health plans, each of which were independently rated for quality. The researchers found no relation between the overall quality of a health plan and health disparities. However, they did find relatively large disparities in the health status of Blacks and Whites. More than 70% of these disparities were due to different outcomes for Black and White patients *enrolled in the same health plan*, while almost none were due to Blacks being enrolled in lower-quality plans than Whites. Thus, while system-level factors certainly contribute to health disparities, they do not explain them entirely.

Patient-Level Factors

The next factor proposed by the IOM Committee (2003) was Patient-Level Factors, consisting of attitudes, beliefs, perceptions, and behaviors of patients that might affect their healthcare. Note that this cause is presented in Figure 2 as an exogenous variable, with no causal variables preceding it, but it may be reasonable to draw a causal path from Prejudice and Related Processes or perhaps Socioeconomic Factors to Patient-Level Factors. In the interest of brevity and clarity, we have not done this, but see Penner, Albrecht, Orom, Coleman, and Underwood (in press) for a discussion of such relations.

Figure 2 shows two separate mediators between Patient-Level Factors and Black–White Healthcare Disparities. The first is Healthcare Attitudes and Behaviors that might make Blacks less likely to seek appropriate healthcare. For example, there is some evidence that, because of mistrust of the medical system, Blacks’ attitudes toward getting influenza vaccinations are more negative than Whites’ (Chen, Fox, Cantrell, Stockdale, & Kagawa-Singer, 2007). While this path certainly contributes to Black–White disparities in healthcare, we know it does not explain treatment disparities for certain diseases (e.g., heart disease) (Conigliaro

et al., 2002). Indeed, a recent national survey reported that Blacks indicated a greater willingness than Whites to seek treatment for some symptoms and greater optimism regarding some treatment outcomes (Schnittker, Pescosolido, & Croghan, 2005). Again, we have a necessary but not sufficient explanation of Black–White disparities.

The second mechanism, and the one of more interest here, concerns how Patient-Level Factors affect Healthcare Interactions. The social context of the medical interaction is quite different for Black patients and White patients, and may contribute to such differences. Approximately 75% of Blacks' medical interactions are racially discordant; that is, their medical interaction is with a provider of a different race/ethnicity. In comparison, only 20% of Whites' medical interactions are racially discordant (Chen, Fryer, Phillips, Wilson, & Pathman, 2005). Thus, race-related attitudes and emotions are much more likely to be activated during medical interactions involving Black patients than White patients.

National surveys find that Blacks are significantly more likely than Whites to believe that their race negatively affects their healthcare (Johnson, Saha, Arbelaez, Beach, & Cooper, 2004) and Blacks are less trusting of their physicians than are Whites (Halbert, Armstrong, Gandy, & Shaker, 2006). In a national survey reported by Malat and Hamilton (2006), 57% of Blacks reported that discrimination occurs "often" or "very often" in Blacks' interactions with White physicians. Thorburn and Bogart (2005) conducted a telephone survey of Black women who had used family planning services; 67% reported race-based discrimination when using these services. In a related study, Bird and Bogart (2001) found that 63% of their Black respondents perceived discrimination in their interactions with their healthcare provider.

Independent of the accuracy of these perceptions, a critical question is how such perceptions affect the healthcare of the individuals who hold them. In a sample of minority women, the lower their trust in the healthcare system, the less likely they were to have received a mammogram (Thompson, Valdimarsdottir, Winkel, Jandorf, & Redd, 2004). O'Malley, Sheppard, Schwartz, and Mandelblatt (2004) conducted a telephone survey regarding the factors that affected Black women's usage of preventive services (e.g., cancer screenings, blood pressures). Among the sample of 1,000 women, higher trust in healthcare provider was significantly associated with greater use of recommended preventive services, this relation remained after controlling for the effects of insurance status and patient characteristics (also see Schneider, Kaplan, Greenfield, Li, & Wilson, 2004). Regarding perceived discrimination, Bird and Bogart (2001) found poorer adherence to antiretroviral medications among patients who perceived that they were the targets of discrimination.

Black patients tend to be more satisfied with their medical encounter (LaVeist & Nuru-Jeter, 2002) and with their medical care (LaVeist & Carroll, 2002) when their physician is Black than when their physician is White. LaVeist, Nuru-Jeter,

and Jones (2003) reported that Black patients were more likely to schedule appointments with their physicians and were less likely to postpone or delay these appointments when they had a Black physician rather than a White physician, even after controlling for health status. Bogart, Bird, Walt, Delahanty, and Figler (2004) found that Blacks' positive stereotypes about physicians were associated with better adherence to physician recommendations.

Why should Blacks be less trusting of the healthcare system and their physician than Whites? We consider three related answers. The first is that knowledge of unethical and racist medical research (e.g., the Tuskegee syphilis experiment) would lead to medical mistrust among Black patients seeking healthcare (White, 2005). The status of this explanation is a matter of some dispute. Brandon, Issac, and LaVeist (2005) found that Blacks were no more aware of the Tuskegee experiment than were Whites, and that being informed did not significantly increase Blacks' distrust of their medical care, which was already much higher than Whites'. However, White (2005) has been very critical of the methodology and conclusions drawn by Brandon et al. (2005), and argues that awareness of the Tuskegee study does affect Blacks' trust in the healthcare system. A second, and somewhat related explanation, is that Blacks' feelings of mistrust in the healthcare system are mediated by perceptions of racism, either in general or in the healthcare system in particular (Benkert, Peters, Clark, & Keves-Foster, 2006; Brandon, et al., 2005). Thus, the more racism Blacks perceive in the world around them, the less likely they are to trust the healthcare system.

Dovidio and colleagues (in press) have suggested that Black mistrust of White healthcare providers may be attributable to the mixed cues Blacks receive in interracial interactions. Greatly simplified, Dovidio et al. (in press) suggest that whereas Whites' verbal behaviors during interaction (e.g., greetings, how polite they are) are controlled by their conscious attitudes toward Blacks, Whites' nonverbal behaviors are controlled by their automatic or implicit attitudes (see Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Implicit attitudes (i.e., affect or feelings) and stereotypes (i.e., beliefs) exist largely outside a person's conscious awareness. However, they can be assessed with instruments such as the *Implicit Association Test* (Greenwald, McGhee, & Schwartz, 1998), which measures, for example, the relative speed with which respondents associate pictures of Blacks and Whites with positive and negative words (Nosek, 2005).

Many Whites' conscious attitudes toward Blacks may be positive, but their implicit attitudes are negative (Dovidio & Gaertner, 2004). These people can be categorized as "aversive racists" because such individuals would actually find their implicit attitudes unpleasant or aversive. Nonetheless, they give mixed signals to Blacks during interactions. Aversive racists' controllable verbal behaviors communicate positive regard; their nonverbal behaviors (or verbal behaviors that are not carefully monitored) communicate negative regard. Although Whites tend to focus on their conscious intentions and controllable behaviors in interactions with

Blacks (Swim, Scott, Sechrist, Campbell, & Stangor, 2003), Blacks tend to show heightened attentiveness and sensitivity to nonverbal cues of prejudice (Richeson & Shelton, 2005). To the extent that Blacks attend to Whites' nonverbal behaviors, which may signal more negativity than their verbal behaviors, Blacks are likely to have more negative impressions of the encounter, more distrust of their White partner, and less satisfaction with the interaction than Whites (Dovidio, Kawakami, & Gaertner, 2002; Dovidio et al., in press). In the case of medical interactions, the result may be less trust of providers. However, we must add that this conclusion is an extrapolation from laboratory studies and has yet to be thoroughly examined in medical interactions.

Provider-Level Factors

As shown in Figure 2, the third factor identified by the IOM Committee (2003) was Provider-Level Factors. These are decisions and behaviors exhibited by healthcare professionals that result in Blacks receiving poorer healthcare than Whites. In Figure 2, there is a path from Prejudice and Related Processes to Provider-Level Factors; we believe that these processes (specifically prejudice and stereotyping) are important causes of healthcare disparities. However, two introductory comments about this path are in order. First, it seems unlikely that blatant and overt prejudice—the sort that typified the United States 50 or 60 years ago—is responsible for disparities in contemporary healthcare. It is reasonable to assume that the overwhelming majority of healthcare providers reject overt and blatant forms of racial prejudice in both their personal and professional lives (Epstein, 2005). However, as we know, contemporary prejudice and stereotyping take more subtle and indirect forms; it is these prejudice-related processes that the IOM Committee (2003) believed played a major role in Black–White disparities in healthcare.

As noted, we share this belief; however, it must be acknowledged that until recently, there were no experimental studies of how prejudice and stereotyping might impact the way healthcare providers treat Black patients and, presently, there are still only a handful of such studies. Thus, although a persuasive argument can be made for prejudice and stereotyping as causes of Provider-Level Factors, the case is still largely circumstantial.

Returning to Figure 2, the model shows two separate paths from Provider-Level Factors to Black–White Healthcare Disparities. One of them is through Healthcare Decisions; the other is through Healthcare Interactions.

Healthcare decisions. Healthcare Decisions refer to decisions physicians make regarding diagnosis and treatment. One model of contemporary racial prejudice that appears applicable to disparities in medical decisions is aversive racism, discussed earlier (see Dovidio & Gaertner, 2004). Recall that the model proposes

a basic discrepancy between aversive racist's *explicit* egalitarian attitudes, which they consciously endorse, and their *implicit* negative racial attitudes, of which they are likely unaware. A further assumption of this model (shared by many other contemporary theories of prejudice; see Devine, Plant, & Blair, 2001) is that a duality or disconnect between conscious, explicit racial attitudes and stereotypes and unconscious, implicit attitudes and stereotypes are quite common among well-educated individuals, who would sincerely describe themselves as liberal and enlightened on racial issues.

The negative feelings and implicit attitudes held by aversive racists produce systematic discrimination, occurring in subtle and indirect ways that do not threaten an aversive racist's nonprejudiced image. Discriminatory action at the individual level occurs more frequently when situational demands are unclear or when norms for appropriate behaviors are weak or ambiguous (Dovidio & Gaertner, 2004). For instance, aversive racists do not discriminate when job applicants are clearly qualified or unqualified for a position. However, they do discriminate on the basis of race when applicants have moderate qualifications—that is, when it is unclear what the appropriate decision should be and when latitude exists to discriminate without appearing so. In these circumstances, aversive racists weigh the positive qualities of White applicants and the negative qualities of Black applicants more heavily in their evaluations, providing justification for their decisions (Hodson, Dovidio, & Gaertner, 2002).

This pattern has also been found in the healthcare literature. Treatment disparities are greater when physicians engage in “high-discretion” procedures, such as recommending a test or making a referral for a procedure or drug, than when they engage in “low-discretion” procedures, such as emergency surgery (Geiger, 2003). Consistent with this finding, LeVeist, Morgan, Arthur, Plantholt, and Rubinstein (2002) found that Blacks were significantly less likely than Whites to receive a referral for tests for heart disease (coronary angiography), even after controlling for insurance coverage, age, gender, and prior health history. Among patients referred for such tests (i.e., a lower discretion situation), there were no race differences in the receipt of treatment.

Similar results have been found in the study of racial disparities in prostate cancer, a disease that can be difficult to diagnose definitively, and for which there is considerable disagreement among professionals as to the most efficacious treatment once it is diagnosed (Underwood et al., 2004). However, among patients believed to have prostate cancer, Blacks were significantly more likely to be offered “watchful waiting” (i.e., no immediate treatment) than Whites (Shavers et al., 2004a). Furthermore, among patients who were offered watchful waiting, more time passed before the first medical monitoring visit for Blacks than for Whites, and Blacks were monitored much less frequently than were Whites (Shavers et al., 2004b). Taken together, these findings implicate the role of racial bias in treatment decisions. However, these results come from analyses of aggregated archival data,

making it difficult to rule out alternative explanation of treatment differences that are unrelated to providers bias (e.g., Black patients preferring to defer treatment, or not having adequate insurance coverage to pay for more aggressive treatment). Therefore, we now turn to studies that use individual physicians, patients, or patient/physician dyads as their unit of analysis.

One notable example of such research on treatment disparities is a study by Schulman et al. (1999). Primary care physicians at a national conference viewed video tapes of actors playing the role of patients complaining about chest pain. The gender and ethnicity of the patients (Black or White) were systematically manipulated. Schulman et al. (1999) found that Blacks were significantly less likely to be referred for further testing than were Whites. Although the results are consistent with findings from archival studies of differences in the treatment of Black and White cardiology patients (see, for example, Vaccarino et al., 2005), it must be noted that a more recent study using standardized patients showing symptoms of coronary heart disease failed to produce any evidence that patient race influenced diagnosis or treatment recommendations (Arber et al., 2006).

Using aversive racism as a framework, implicit attitudes and stereotypes should be better predictors of physicians' treatment decisions than their explicit attitudes and stereotypes. Green et al. (in press) explored how physicians' implicit and explicit racial attitudes and stereotypes affected their treatment decisions. First, physicians' implicit and explicit attitudes toward Blacks and Whites were assessed. They were then presented with vignettes about hypothetical emergency room patients with symptoms of serious heart problems, with the race of the patients systematically varied. As is oftentimes the case, physicians showed no bias toward Blacks on the explicit measures. However, on the measures taken at the implicit level (using the *Implicit Association Test*), physicians had more negative attitudes toward Blacks than Whites, and had stronger stereotypes of Blacks as being uncooperative patients than Whites. More importantly for this discussion, Green et al. (in press) found that physicians' implicit biases were strongly associated with their recommendations to give patients blood-thinning drugs (the appropriate treatment given the symptoms); physicians who were more biased were less likely to recommend these drugs for Black patients.

van Ryn (2002) has proposed a social-cognitive model of how race affects treatment decisions that has much in common with the aversive racism approach to healthcare disparities, but builds more directly on experimental social psychological work on the effects of stereotypes on social perceptions (e.g., Kunda & Spencer, 2003). van Ryn (2002) argues that patient ethnicity causes physicians to place the patient in a social category, which in turn activates implicit and explicit stereotypes about individuals who belong in that category. In turn, this influences the physician's interpretation of the patient's symptoms, which affects the physician's decisions about diagnosis and treatment. In a 2000 study, van Ryn and Burke

surveyed physicians shortly after they interacted with Black patients and White patients. Physicians answered a series of questions about each patient they had seen. Question topics ranged from the likelihood of patient drug abuse to patient compliance with medical advice, to estimates of patient intelligence, educational level, and rationality. Before analyzing for differences in physicians' perceptions of Black patients and White patients, van Ryn and Burke (2000) statistically controlled for patient attributes (e.g., age, SES, degree of illness, and personal attributes (e.g., assertiveness). Even after controlling for these attributes, effects emerged for patient ethnicity. Specifically, physicians saw Black patients as more likely to abuse drugs, less likely to be compliant with medical recommendations, less intelligent, and less educated. Physicians also viewed low SES Blacks as less pleasant and less rational than low SES whites.

van Ryn, Burgess, Malat, and Griffin (2006) also found differences regarding physicians' perceptions of the attributes of Black patients and White patients; however, in this study, patients were individuals medically suitable for coronary bypass surgery. Of importance, van Ryn et al. (2006) found that Black patients were recommended for bypass surgery less often than White patients, and physicians' stereotypic perceptions of Black patients as less educated and less physically active mediated the effects of patient ethnicity on recommendations for the procedure. That is, rather than clinical factors or appropriateness of the treatment, patient stereotypes were significant predictors of physicians' treatment recommendations.

Other studies have also found patients' race influenced providers' healthcare decisions and recommendations. For example, Bogart, Catz, Kelly, and Benotsch (2001) gave physicians identical vignettes about HIV patients, but varied the race of the patient. Physicians rated Black patients as significantly more likely to be nonadherent than White patients; it should be noted that adherence to treatment is one of the major predictors of whether physicians will provide antiretroviral therapies. Martin (1993) found that White therapists assigned less importance to the behavior of Black than White adolescents during diagnosis; Delahanty et al. (2001) found that Blacks were less likely to be diagnosed with depression than were Whites. These findings suggest that providers give less attention to the actual symptoms of Black patients, a finding consistent with the notion that stereotypes play a disproportionate role in diagnoses. Indeed, stereotypes may have been "blinding" the providers as to what the patients were actually saying or the symptoms they were presenting.

Studies using archival data also suggest that stereotyping may affect healthcare decisions. For example, although the risks associated with osteoporosis among Black women are equal to, if not greater, than among White women, Black women are less likely than White women to receive testing for osteoporosis (Mikulski, Saag, George, Mudano, & Banerjee, 2005). When women from both groups have been diagnosed with osteoporosis, Black women are less likely to receive the

appropriate medication compared to White women (Hamrick, Whetstone, & Cummings, 2006).

Collectively, these studies support van Ryn's ideas about how stereotypes affect diagnoses and treatment and van Ryn and Williams's (2003) argument that "patient sex, age, social economic status, . . . and race/ethnicity can influence providers' beliefs about and expectations of patients independent of other factors" (p. 497).

Healthcare interactions. Returning to Figure 2, in the second path Healthcare Interactions mediates the path from Health Provider Factors to Black–White Healthcare Disparities. That is, provider factors affect face-to-face patient–provider interactions, which result in healthcare disparities.

Why would we expect White–Black medical interactions to differ from White–White medical interactions? One answer to this question comes from contemporary theories of prejudice and intergroup relations. As already discussed, it seems likely that at the implicit level, Black patients will activate more negative affect and less positive stereotypes from White physicians than will White patients. People automatically distinguish others on the basis of race, and this social categorization spontaneously activates more positive feelings and beliefs about ingroup members ("we's") than outgroup members ("they's") (Gaertner & Dovidio, 2000). For example, Whites automatically activate stereotypes of Whites as intelligent, successful, and educated, and of Blacks as aggressive, impulsive, and lazy (Blair, 2001; Wittenbrink, Judd, & Park, 1997). There is also evidence that Black stereotypes can be activated outside of the conscious awareness of healthcare providers. For example, therapists who were implicitly primed with Black stereotypes rated Black patients less positively on "hostility-related" characteristics (Abreu, 1999). In sum, numerous studies suggest that race is a very salient stimulus for activating social categorization processes in face-to-face interactions; it seems logical that this would extend to medical interactions.

At the same time, and as we suggested earlier, there is reason to expect that Black patients may be sensitive to nonverbal behaviors displayed by White physicians (Richeson & Shelton, 2005). Thus, Blacks may be likely to form more negative impressions of the encounter and be less satisfied with the interaction compared to Whites (Dovidio et al., in press).

As a consequence of these processes, when White provider–White patient interactions are compared to White provider–Black patient interactions, differences in providers and patients' behaviors and reactions should emerge. Unfortunately, there is relatively little research in which racially concordant and racially discordant medical interactions have been systematically compared. This is partially because patients may be reluctant to have their clinical interactions observed, and partially because providers may feel personally and legally threatened by research that may uncover their racial biases. Thus, they too have been reluctant to

participate in such studies. Nonetheless, this small literature is informative and, when combined with other studies, speaks to whether provider–patient interactions are a likely source of healthcare disparities.

Cooper et al. (2003) found that race-concordant (i.e., White–White or Black–Black) visits were significantly longer and were characterized by greater positive affect on behalf of the patient compared to race-discordant (White–Black) interactions. Johnson, Roter, Powe, and Cooper (2004) also found more positive affect in race-concordant dyads compared to race-discordant dyads, and showed that White physicians were more verbally dominant and less patient-centered with Black than with White patients. In our own work with cancer patients (see Albrecht, Penner, & Ruckdeschel, 2003), our findings indicate that oncologists dominate conversations with Black patients significantly more than they do with White patients, even after controlling for patient education and income levels.

Other studies find that when White physicians interact with Black patients, they provide less information and engage in less joint decision-making than when they interact with White patients (Gordon, Street, Sharf, Kelly, & Soucek, 2006). Similarly, in a study of breast cancer patients, Siminoff, Graham, and Gordon (2006) found that White physicians spent significantly less time engaging in relationship-building activities with Black patients than with White patients. Not surprisingly, Gordon et al. (2006) reported that Black lung cancer patients were less trusting of their oncologists because they perceived their physicians as less supportive, less partnering, and less informative. More recently, Street, Howard, and Hiadet (in press) found that physicians were more contentious in interactions with Black patients than with White patients.

These findings are consistent with earlier work by Cooper-Patrick et al. (1999) and Kaplan, Gandek, Greenfield, Rogers, and Ware (1995) who reported that Black patients rated participatory decision making in interactions with White doctors significantly lower than White patients (also see Koerber, Gajendra, Fulford, BeGole, & Evans, 2004). Finally, in perhaps the most detailed and intensive study to date, Oliver, Goodwin, Gotler, Gregory, and Strange (2001) observed interactions between 138 physicians and 3,743 White and 509 Black patients. They recorded the time physicians expended in 20 different activities. Results indicate that White physicians spent significantly less time planning treatment, providing health education, assessing health knowledge, engaging in informal conversation, and answering questions with Black patients compared to White patients. Physicians spent more time with Black patients, relative to White patients, discussing what they hoped to accomplish and substance use assessment. Summarizing this research literature, Ferguson and Candib (2002) concluded that, relative to members of majority groups, “minority patients. . . are less likely to engender empathic responses from physicians. . . receive sufficient information, [and be] encouraged to participate in medical decision making” (p. 353).

With regard to the path in Figure 2 from Health Interactions to Black–White Healthcare Disparities, these findings appear to support a link between what transpires between the provider, the patient, and subsequent healthcare. There is a significant positive relation between patient involvement in medical interactions and patient recall of medical information (Hall, Roter, & Katz, 1988; Stewart, 1995), treatment adherence (Bakken et al., 2000; Hall et al., 1988; Roter, et al., 1997), and patient satisfaction (Hall et al., 1988; Stewart et al., 2000). Moreover, as we have already discussed, Black patients have less trust for White providers compared to White patients, which is associated with a number of healthcare-related outcomes, including adherence to provider recommendations.

We wish there were more studies of Provider-Level Factors, especially more studies that directly observed patient and provider behaviors in racially discordant interactions. All the studies cited are correlational, and none assessed the providers' racial attitudes and stereotypes; thus, it is impossible to estimate the amount of variance in the interaction due primarily to the provider's thoughts, feelings, and actions, and the amount due primarily to the patients' thoughts, feelings, and actions. However, the limited numbers of studies that do exist demonstrate a consistent pattern of differences regarding the affective tone and quality of the relationships in medical interactions involving Black patients and those involving White patients. Moreover, these findings are supported by contemporary social psychological models of how subtle, implicit prejudice and stereotyping should affect Whites' reactions to Blacks in interpersonal interactions. Finally, differences in the outcomes of interactions involving Black patients and White patients occur in those variables directly related to quality of the healthcare patients receive (e.g., patient involvement and trust). It seems reasonable to argue that the last major set of paths in the model are valid, and that prejudice and stereotyping play a significant role in healthcare disparities and thus in health disparities between Blacks and Whites.

Future Research and Social Policy Implications

In the final section, we outline suggestions for future research to help elucidate the complexity of health disparities. Furthermore, we discuss how existing findings on health disparities may inform the development and enactment of social policies designed to reduce health disparities in the United States.

Future Research

Figure 1 and Figure 2 identify a number of different possible causes of health disparities and a number of areas for future research. The best possible outcome is that all the causes simultaneously receive research attention because, as we have tried to repeatedly emphasize, the causes are not mutually exclusive. However,

some areas may be more in need of research than others. For example, there are large numbers of high-quality theoretical and empirical pieces on how perceived prejudice affects people's health and on the relation between socioeconomic factors and health (see Mays et al., 2007; Williams et al., 2003). By contrast, there has been much less research on how and why racially discordant medical interactions might affect the quality of healthcare received by Black patients.

One might reasonably assume that social psychologists have studied such phenomena; unfortunately, members of this discipline have typically conducted basic laboratory research on processes and mechanisms that underlie prejudice and stereotyping, with practical consequences considered secondary objectives. In contrast, applied researchers have primarily focused on the practical problem of racial disparities in health, with less attention focused on the psychological mechanisms that may be responsible for these disparities. We argue, however, that the approaches of basic and applied researchers interested in disparities are largely complementary. Thus, integrating these approaches is likely to produce a more accurate and comprehensive understanding of the issue at hand, which may ultimately yield viable solutions to the problem.

An example of such an approach would be to continue to study the structure and content of physician stereotypes about ethnic minority patients and how they affect treatment decisions. van Ryn and her colleagues (van Ryn, Burgess, Malat, & Griffin, 2006), for example, have already formulated an ambitious set of experimental hypotheses and suggestions for future research about how provider bias in treatment decisions contributes to health disparities. Green et al. (in press) provide an exciting illustration of one way this may be accomplished, but such studies need to move beyond paradigms using hypothetical vignettes to include real patients and actual treatment decisions.

Another area that has considerable potential for both basic and applied research is systematic attempts to change attitudes relevant to healthcare disparities. Specifically Dovidio et al. (in press) argued, on the basis of what is already known about the pervasiveness of aversive racism, that it is reasonable to assume that: (a) at an explicit conscious level, most White healthcare professionals find racist attitudes and discriminatory behavior aversive and unacceptable, but (b) implicit negative stereotypes and attitudes among these White healthcare professionals do affect their interactions with Blacks. This led Dovidio et al. to propose approaches that would use healthcare professionals' overt negative attitudes toward racism as motivation to modify or inhibit the clear expression of these implicit biases during medical interactions. Experimental laboratory work on the effectiveness of such approaches (see Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000, for example) suggests this approach may hold considerable promise in this applied setting. No doubt field experiments would be challenging, but the benefits would most likely prove to be extremely productive. Furthermore, such an intervention would

provide an innovative venue to study the relation between explicit and implicit attitudes and stereotypes and its relative impact on behavior.

There is a need to measure explicit and implicit racial attitudes and stereotypes among physicians and patients and assess their impact on racially discordant interactions between patients and providers. This could provide interesting ways to test many of the ideas found in current dual process theories of contemporary prejudice and stereotyping, as well as valuable information for use in the training of health providers. Racially discordant interactions would also provide an excellent natural laboratory for tests of interventions designed to reduce ingroup–outgroup biases (see Hewstone, Rubin, & Willis, 2002).

International perspectives on health disparities. Finally, we consider health disparities from an international perspective. We have focused exclusively on health disparities within the United States, with a special emphasis on Black–White disparities. However, we are also quite aware of the enormous disparities between the health status of people living in rich and poor nations. When we compare the health status of Blacks and Whites in the United States there is usually some overlap in the distributions of two groups. However, when we compare rich and poor countries, health indicators such as infant mortality rates, maternal mortality rates, life expectancy, incidence of certain diseases, and immunization rates often form two quite separate distributions. For example, the infant mortality rate in Angola is 84 times as great as it is in Sweden (<http://www.geographyiq.com/ranking.rankings.htm>). Reducing these international health disparities is a critical worldwide humanitarian problem. Our decision not to include international health disparities in the main portions of this article should not be seen as a failure to recognize the seriousness of this health crisis. We did not discuss these disparities because we believe their causes and solutions involve areas far beyond our professional competence and expertise. Thus, as laypeople we are extremely concerned about these international health disparities, but we do not feel competent to address them in a scientific, professional article.

It is reasonable to ask, however, whether the model we have proposed would be applicable in countries that have a roughly comparable level of industrial development as the United States but a different system of financing healthcare. To be more specific, the United States is fairly unique among industrialized nations in that its healthcare system is primarily privately financed. (We discuss some of the social and policy implications of this in the next section.) Thus, it might be reasonable to ask whether certain factors, which were given prominent roles in the model put forth in this article, would be included in models of healthcare disparities in countries such as Canada, which has a single-payer system (i.e., the government pays most of an individual's healthcare expenses) or other industrialized countries, like France, which come closer to true socialized medicine (where

the government is actually the healthcare provider). A brief review of the literature on health disparities in countries (Australia, Canada, Germany, New Zealand, and the United Kingdom) with substantially greater government support for healthcare than in the United States suggests that the model, with some modifications, would be still quite applicable in those countries as well. Consider, for example, the role of socioeconomic factors in health status disparities. In all these countries, despite the fact that the government covers most if not all of an individual's medical expenses, there is still a positive association between social economic status and health status and quality of healthcare (see for example, Banks, Marmot, Oldfield, & Smith, 2006; Lasser, Himmelstein, & Woolhandler, 2006). However, it is also true that the strength of this association is much greater in the United States than these other countries. Put simply, it is much more dangerous health-wise to be poor in the United States than in most other industrialized nations. However, socioeconomic factors affect health status to some degree everywhere in the world.

The model we presented also includes system-level factors as a cause of healthcare disparities. It is reasonable to ask whether this would also be the case in countries with publicly financed or supported healthcare system. It appears that system-level factors certainly play much less of a role in healthcare disparities in these countries, but again they do not totally disappear. As Schoen and Doty (2004) noted in their study of access to healthcare in five countries, in some countries with government-supported systems wealthier people still get better access to healthcare because they are willing to pay for it. That is, in countries Schoen and Doty studied where there were private alternatives to the public healthcare system, wealthier people were able to take advantage of these.

The importance of other components of the model would not seem to vary as a function of the country in which they were studied. This is because they involve basic psychological and interpersonal communication processes that are largely invariant across national and international borders. Thus, we assume, for example, that the healthcare problems of the aboriginal peoples in Canada may involve, in part, problems of trust and communication when they interact with White physicians. And we assume, as another example, there would be implicit stereotyping and explicit stereotyping in clinics in the United Kingdom or France when European physicians interacted with immigrants from the Asian subcontinent or northern Africa. Thus, although the model was developed and explicated within the context of health disparities in the United States, with some minor modifications we see it as valid and useful within other countries.

Policy Implications

Some of the best healthcare facilities and medical research institutions in the world are located in the United States; research conducted and technologies

developed at these facilities and institutions have led to stunning advances in the detection, diagnosis, and treatment for a host of diseases and illnesses. Yet, in large part because of disparities in morbidity and mortality rates between Blacks (and other racial/ethnic minorities) and Whites, the United States lags behind other industrialized nations in many health indicators (e.g., life expectancy, infant mortality rates). Major public policy initiatives that address causes of health disparities associated with socioeconomic factors, prejudice-related processes that affect housing and living conditions and health system-level factors are all needed, but specific recommendations for such policy initiatives are beyond the scope of our expertise. Thus, our recommendations focus on changing the manner in which healthcare is provided to Black patients, with a special emphasis on medical interactions. We discuss three broad areas.

First, any policy initiatives intended to reduce disparities in the medical care of Black and White patients must be broad and multifaceted. That is, interventions that address patient–provider interactions must be put in the context of other aspects of the patient’s care. For example, the higher risks associated with pregnancies and birth outcomes among Black women may be in part due to patient–provider interactions, but is also likely accounted for by social and economic difficulties, compromised maternal perinatal health status, and challenges to access and utilization of preconceptional and prenatal healthcare (Albrecht, Eaton, & Rivera, 1999). Interventions that change the dynamics of patient–provider interactions and thus increase the probability of pregnant minority patients adhering to a particular drug regimen or carrying out the referral recommendations of a physician are pointless (or worse) if the patients cannot afford the drug or lack the transportation to get to the referral site. Thus, we argue that physicians who treat economically and socially disadvantaged patients need to learn to effectively manage the total care of their patients and to take more responsibility for services that extend beyond their face-to-face interactions with patients. There is a good deal of discussion in medical training about treating the “total patient” (e.g., Stewart, 1995), but the amount of training provided for such an approach to physicians in medical schools is unclear, and most likely a peripheral focus to other training. Put simply, enhancing a patient’s perceived trust of his/her physician is important. But, by itself, it is likely “too little too late” for eradicating the disparities that may have created the patient’s medical status in the first place, let alone the patient’s pending health outcomes. Thus, this kind of healthcare management needs to be taught in medical schools.

Second, healthcare provided to minority patient populations needs to emphasize “continuity of care.” Continuity of care means that, over an extended period of time, a patient sees the same physician or at least the same small group of physicians, all of whom regularly interact with one another. Research suggests this is less likely to happen for Black patients than White patients (Doescher, Saver, Fiscella, & Franks, 2001). There are a number of potential positive healthcare

outcomes if we could increase the level of continuity of care for Black patients. For example, consider what we know about the conditions under which people are likely to stereotype: stereotyping is a way of reducing the complexity of new or ambiguous social stimuli. If a larger percentage of healthcare providers knew their patients better, the likelihood that White providers would stereotype Black patients may decrease. This would not only serve to reduce prejudice and stereotyping, but also to permit the development of the kind of rapport that would facilitate the exchange of accurate information between the provider and patient. In contrast, consider the likely outcomes when there is little continuity of care. Recall one of the oldest findings in social psychology: when information is socially transmitted from one party to another, important individual details drop out and the remaining information is shaped to conform to cultural norms of the transmitters (Bartlett, 1932). This suggests that if minority patients are treated by successive providers who communicate only minimally with one another, the probability that these communications will contain culturally biased, inaccurate information about the patient increases. Further, if there is less empathy and closeness in racially discordant medical interactions, little would occur to counteract the effects of inaccurate information about a patient.

Note that improving continuity of care does not require a major change in how healthcare is delivered to economically and socially disadvantaged groups. There are multiple reasons for less continuity in the care received by minorities, but it does *not* appear that the primary ones are a lack of resources at healthcare facilities. Without any increase in their resources, facilities that serve a large percentage of disadvantaged Black patients could reorganize the healthcare provider staff such that returning patients see the same physicians, or at a minimum, a physician who knows a good deal about them before the patients' next visit.

In the absence of strong continuity of care, providers might do well to adopt an interpersonal version of widespread medical practice of "universal precautions." Currently, universal precautions refer to the assumption that all bodily fluids a healthcare provider might handle are potentially infectious and should be treated accordingly. In the proposed variant, all healthcare providers would assume that because of mistrust on the part of the patient and stereotyping on the part of the provider, there is an increased likelihood of miscommunication in all interactions with minority patients. Precautions could then be taken to minimize or reduce the danger of this miscommunication.

Finally, we argue that there must be a concerted effort to increase the number of Blacks and other minority group members who enter careers in applied and basic health-related professions. If, as we have argued, one source of health disparities is racially discordant healthcare interactions, one solution is to change the racial/ethnic make-up of the cohort of healthcare providers. As noted, Black patients are relatively unlikely to be seen by a Black healthcare provider. There is nothing on the horizon to suggest this is going to change. Approximately 14%

of the U.S. population is Black, but less than 4% of physicians self-identify as Black and less than 7% of medical school graduates are Black (Association of American Medical Colleges, 2005).³ We are not suggesting Black health-care providers are automatically immune from negative implicit stereotypes about Blacks. However, it does seem reasonable that the miscommunication and mistrust that may characterize many racially discordant interactions (see Dovidio et al., 1997; Richeson & Shelton, 2005) would be less probable in racially concordant interactions.

To remediate this problem, new policies are needed to substantially increase the number of Black college graduates who pursue careers as physicians and physician-scientists. These policies should include actions that range from earlier and more focused attempts to recruit minority undergraduates into medical careers, to increased funding to support minority medical education, to ways to legally and constructively address the recent trend away from affirmative action admission policies in medical colleges. In addition, once these minority students complete their medical training, there must be sufficient incentives for them to provide healthcare in settings where disparities are the greatest.

We hope that these medical students and their classmates of all ethnicities would receive more training in the social and behavioral sciences. Medical training needs to go beyond the usual course or two in “cultural competence” and move toward providing students with additional training on the social and environmental sources of illness and disease. As the complex, multicomponent model presented here illustrates, someone who proposes or endorses a single cause for almost any widespread public health problem will grossly misunderstand the causes of the problem. Broadening the training of medical clinicians and scientists will make them better equipped to understand and solve these multifaceted problems. Furthermore, scientific initiatives and federal funding for new projects are becoming increasingly interdisciplinary and translational (i.e., applying basic research to clinical problems).

We also recommend that researchers in the social and behavioral sciences need to be cross-trained in collateral fields of medicine and basic science and gain at least a working knowledge of areas associated with biological and genetic aspects of disease. This would make them much more desirable partners in interdisciplinary, translational projects. This will require some major changes in how the disciplines view post-undergraduate training. Although this endeavor would require great effort, we believe the potential payoff in terms of contributions to basic research and social benefits would more than justify the effort.

³ In passing we note that the situation with regard to PhDs in the biological sciences is even worse; about 3% of the recipients are Black (Johnson, 2005) and less than 2% of the scientists at the National Institutes of Health are Black. To the extent that enlightened self-interest influences one's research interests, this also probably negatively affects the amount of research being done on health disparities.

Conclusion

Black–White disparities in health status and healthcare in the United States are large, pervasive, and show little sign of diminishing in the immediate future. Although genetic factors certainly explain some differences in the incidence of specific diseases among Blacks and Whites, political, economic, social, and psychological processes likely account for much more variance in the disparities, especially disparities in healthcare. This problem has multiple, interdependent causes. That is, none of the causes discussed in this article constitutes a necessary and sufficient explanation of health status disparities, and each cause interacts with other causes to produce the type of disparities that concern us here. However, our theoretical backgrounds and analyses of the literature led us to place special emphasis on the contribution of healthcare disparities to Black–White health status disparities. In this context, we focused on the roles that racial prejudice and stereotyping might play in differences between diagnosis and treatment decisions and medical interactions involving Black patients and Whites patients. There is a considerable body of literature suggesting that prejudice and stereotyping are major causes of Black–White disparities in healthcare; however, the case is still largely circumstantial. This creates the need for future research that will seek to identify reasons why Black and White patients are treated differently, with the ultimate goal of developing and implementing interventions to effectively address this significant social problem.

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