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## **Life-Threatening Disparities: The Treatment of Black and White Cancer Patients**

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*Cancer mortality and survival rates are much poorer for Black patients than for White patients. We argue that Black–White treatment disparities are a major reason for these disparities. We examine three specific kinds of Black–White treatment*

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*disparities: disparities in information exchange in oncology interactions, disparities in the treatment of breast cancer, and disparities in the treatment of clinically localized prostate cancer. In the final section, we discuss possible causes of these disparities, with a primary focus on communication within medical interactions and the role that race-related attitudes and beliefs may play in the quality of communication in these interactions.*

In this article, we focus on a relatively specific kind of health disparity, racial/ethnic disparities in the treatment of cancer. Our basic thesis is that, although biological, genetic, and physiological factors play significant roles in who develops cancer, how it is treated, and who survives it, social, political, economic, and psychological variables also substantially contribute to cancer racial/ethnic disparities in treatment outcomes. In addition to addressing racial/ethnic disparities in the treatment of cancer, we will also consider disparities associated with socioeconomic status (SES) because, in the United States, SES typically strongly covaries with ethnicity.

Because of the disparities the authors target in their own research, this article focuses on disparities in the treatment of cancer in the United States, but the problem of health care disparities is not unique to the United States. Health care disparities are a persistent and pervasive social problem, found in at least 126 countries, which include 94.4% of the world's population (Dorling, Mitchell, & Pearce, 2007). This includes countries with primarily private payer systems, but health care disparities also exist in countries with single-payer government-supported health care systems, including Canada (Frohlich, Ross, & Richmond, 2006) and Sweden (Rostila, 2010), for example. Furthermore, while we primarily address Black–White disparities, ethnicity/race is not the only group characteristic that has been linked to health care disparities. For example, in the United States and other countries, attributes such as sexual orientation (Dilley, Simmons, Boysun, Pizacari, & Stark, 2010), age (Obeidat et al., 2010), gender (Mobaraki & Söderfeldt, 2010), and developmental disabilities (Linehan, Walsh, van Schroyen, Lantman-de Valk, Kerr, & Dawson, 2009) have all been associated with disparities in health. In the conclusion to this article, we will briefly consider the implications of the findings discussed in this article for other countries and other groups besides Blacks with cancer in the United States.

A brief word about terminology: Following convention in the public health research literature, the term “Black” describes people who self-identify as Black, African American, or Afro-Caribbean; the term “White” describes people who self-identify as non-Hispanic European American or Caucasian. Also, as “race” is

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used here it refers to a social construction, not a description of a group's genetic characteristics.

The article includes four separate but overlapping sections on Black–White disparities in the treatment of cancer. In the first, we describe disparities in communication and information exchange between oncologists and patients during oncology interactions; we then summarize a body of research on disparities in the treatment of breast cancer; this is followed by research findings on disparities in the treatment of prostate cancer. These three sections describe the nature of the Black–White treatment disparities, but they do not directly discuss their causes. In the final section, we directly address the critical question of why these disparities occur. To do this, we will draw on the landmark report by the Institute of Medicine on health care disparities (“Unequal Treatment”) (Smedley, Stith, & Nelson, 2003) as well as on empirical work from the fields of medicine and psychology on how patients’ and physicians’ beliefs and attitudes may affect the relative quality of treatment Black and White cancer patients receive.

We believe that race-related attitudes play a significant role in disparities in cancer treatment. In a phrase, race matters. However, our view of how race-related attitudes affect health care disparities begins with the premise that while treatment disparities are quite serious and important, their immediate causes may often involve subtle processes. There is, to be sure, a long, sad, and often shameful history of overt racism and racial discrimination in American medicine (cf. Byrd & Clayton, 2000, 2002); and certainly there are still instances where this “old-fashioned” form of racial bias may produce significant kinds of health care disparities. Today, however, the impact of race-related attitudes on medical interactions more typically involves more subtle and nuanced processes. These include overt conscious processes such as differences in how Black patients and their non-Black physicians interpret their own and each other's behaviors during their interactions and consciously held stereotypes about Blacks that may not involve traditional racial stereotypes but nonetheless create Black–White treatment disparities (cf. van Ryn & Burke, 2000). Perhaps more importantly, implicit and nonconscious affective and cognitive processes can result in significant Black–White treatment disparities (van Ryn & Saha, 2011). Indeed, as we shall discuss later, recent research (e.g., Green et al., 2007; Penner et al., 2010b) suggests that it is often implicit rather than explicit forms of racial bias that are responsible for negative outcomes in racially discordant medical interactions. Thus, while race matters, a contemporary explanation of how racial attitudes may produce disparities in cancer treatment does not necessarily require attributing malevolent conscious intent to the people who hold them. But, of course, this does not make these disparities any more acceptable or their effects less harmful.

Now we turn to cancer treatment disparities. To begin our discussion of these disparities, we need to quite clearly describe the kind of problems that concern

us and place cancer treatment disparities in the broader context of overall health disparities.

### Disparities versus Differences

A meaningful discussion of the relative health status of Blacks and Whites needs to distinguish health-related differences in health status from health-related disparities. This article is not primarily concerned with differences in cancer health status that are due to biological, genetic, or physiological factors. Such factors are most frequently manifested in differences in the incidence or prevalence of a certain kind of cancer in some specific racial/ethnic group. Two examples of such differences are that men of African ancestry may have a stronger genetic predisposition to develop prostate cancer than men from other populations (Salami, Etukakpan, & Olapade-Olaopa, 2007); and that relative to other groups, Eastern European Jewish women have a substantially higher incidence of mutations of the BRCA 1/2 genes that are believed to be related to the development of breast cancer (Roa, Boyd, Volcik, & Richards, 1996). Such differences are quite distinct from disparities, which Braveman (2006) defines thus:

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).

A critical aspect of Braveman's definition is that health disparities result from social, political, and economic processes and thus, at least theoretically, can be prevented from occurring or can be eliminated once identified. Thus, in this article, we do not discuss the biological, genetic, or physiological aspects of Black–White differences in breast or prostate cancer mortality. Rather, we focus on something that clearly can be prevented or eliminated—disparities in how cancer is treated.

The Institute of Medicine report on the health status of racial/ethnic minorities in the United States (Smedley et al., 2003) concluded that the poorer health status of certain racial/ethnic minorities was due, in large part, to the health care they received; that is, their health status was poorer in large measure because they received poorer treatment for their medical problems. This conclusion provides the basis of a core assumption of this article. Specifically, we believe that for many cancers, a substantial portion of the Black–White differences in rates of mortality are disparities that could be eliminated if disparities in cancer treatment were eliminated. This is not to say that if all treatment disparities were eliminated, the cancer mortality rates for different racial/ethnic groups would also be eliminated; stage at diagnosis and racial/ethnic variability in genetic and biological factors may play important roles in who survives cancer (Wong, Ettner, Boscardin, & Shapiro,

2009). However, large epidemiological studies suggest a dramatic reduction in mortality differences between Blacks and Whites when the two groups receive equivalent treatments for their cancers (Bach et al., 2002).

### **Cancer-Related Mortality Rates among Blacks and Whites**

Cancer is the second leading cause of death (following heart disease) in the United States for the all racial/ethnic groups identified by the Center for Disease Control and Prevention (National Center for Health Statistics [NCHS], 2008). However, the mortality rate (about 223 per 100,000) among people who self-identify as Black is substantially higher than among members of any other racial/ethnic group. According to the most recent data on causes of deaths in the United States (Siegel, Ward, Brawley, & Jemal, 2011), the overall mortality rate due to cancer among Blacks is about 25% higher than the mortality rate among Whites. The specific cancers we address in this article (breast and prostate) provide even more striking examples of this disparity. Although Black women are slightly less likely to develop breast cancer than White women, the mortality rate due to breast cancer is about 40% higher among Black than White women (Siegel et al., 2011). Black men are about 1.4 times as likely to develop prostate cancer as are White men, but Blacks are about 2.4 times as likely to die of prostate cancer as are Whites (NCHS, 2008; Siegel et al., 2011). In other words, the Black–White disparity in deaths due to prostate cancer is substantially greater than the Black–White difference in the incidence of prostate cancer. The data on 5-year survival rates following a diagnosis of cancer tell the same story. Among people who have breast or prostate cancer, Blacks have lower 5-year survival rates than do Whites (NCHS, 2008). Siegel et al. (2011) succinctly summarize the consequences of cancer health disparities, “The elimination of educational and racial disparities could potentially have avoided about 37% of the premature cancer deaths among individuals aged 25–64 years in 2007 alone.” (p. 212.)

A very large literature also exists showing that SES is a strong predictor of overall health status (Gallo, Espinosa de los Monteros, & Shivpuri, 2009; NCHS, 2008). With specific regard to cancer, a number of individual studies (Hussain, Altieri, Sundquist, & Hemminki, 2008; Yu, 2009) show higher rates of cancer mortality among poorer and less-educated people.

The question then becomes why are Blacks and lower SES individuals more likely to die from cancer? One well-documented cause is that, for a host of reasons, minority group members and low SES individuals are usually less likely to be screened for certain cancers (e.g., breast and colorectal) (Ponce et al., 2004; Smith-Bindman et al., 2006) and their cancers are often diagnosed at more advanced stages than is the case for higher SES individuals and or Whites (Centers for Disease Control and Prevention [CDC], 2005). There is no doubt that screening disparities are a major cause of disparities in mortality (Smith-Bindman et al.,

2006), but it must be noted that, at least for some cancers, disparities in mortality rates remain even when stage at diagnosis of cancer is controlled (Jemal et al., 2004). This finding appears to support the core assumption of this article: in particular, for breast and prostate cancers, treatment disparities play a major role in the disparities in mortality rates between Blacks and Whites.

### **Black–White Disparities in Information Exchange during Oncology Interactions**

It is estimated that about 75% of medical interactions in which Black patients participate are “racially discordant;” that is, the patient is Black and the physician is not (Penner, Albrecht, Orom, Coleman, & Underwood, 2010a). On the other hand, for White patients, only about 20% of their medical interactions are racially discordant. There is a large body of research showing that, relative to racially concordant medical interactions, racially discordant medical interactions are less positive and productive (Penner et al., 2010a). To be more specific, racially discordant medical interactions are shorter in length (Cooper-Patrick et al., 1999), less patient-centered (Johnson, Roter, Powe, & Cooper, 2004), and characterized by less positive affect (Johnson et al., 2004). These interactions involve fewer attempts at relationship building (Siminoff, Graham, & Gordon, 2006) and less patient participation in decision making (Koerber, Gajendra, Fulford, BeGole, & Evans, 2004). Furthermore, racially discordant medical interactions are more likely to be verbally dominated by the physician (Johnson, Saha, Arbelaez, Beach, & Cooper, 2004). Finally, Oliver, Goodwin, Gotler, Gregory, and Strange (2001) found that White physicians spent significantly less time planning treatment, providing health education, assessing health knowledge, engaging in informal conversation, and answering questions with Blacks as compared to White patients.

We could not locate data on the percentage of oncology interactions that are racially discordant, but it is likely that this percentage is at least as high as it is for primary care interactions, given that fewer than 2% of oncologists in the United States are Black (Newman, Pollock, & Johnson-Thompson, 2003). The research literature on outcomes of racially discordant cancer interactions is much smaller than the literature on racially discordant primary care interactions, but it also seems reasonable to assume that the outcomes do not meaningfully differ from those noted earlier. A study by Gordon, Street, Sharf, Kelly, and Soucek (2006a) supports this conclusion. These authors examined the relative levels of trust of Black and White lung cancer patients before and after a visit with an oncologist. As others have found, there was no previsit Black–White difference in patient trust in physicians, but there was a postvisit difference, with trust becoming significantly lower among Blacks. Black patients’ postvisit trust was significantly

associated their perceptions of how informative, supportive, and participatory the oncologist was.

Our own work on disparities in oncology interactions takes a slightly different tack than Gordon et al. (2006a). We are specifically interested in information exchange in oncology interactions. Our research is predicated on the assumption that most patients want as much information as possible about their cancer (Hack, Degner, & Parker, 2005) and that their preferred source of information is their physician (Arora et al., 2007; Rutten, Arora, Bakos, Aziz, & Rowland, 2005). Effective information exchange, with the goal of having a patient understand and be understood, is associated with increased patient satisfaction and involvement. Effective information exchange also increases involvement in the consultation and in decision making, satisfaction with treatment choices, improved ability to cope at all stages of cancer, reductions in anxiety and uncertainty, improved communication with family members, and reduced disruption in their quality of life (Arora, 2003; Epstein & Street, 2007; Griggs et al., 2007a; Hack et al., 2005). This body of research suggests that effective information exchange during an oncology interaction is critical to patients deriving maximum benefit from a visit to an oncologist and making the best decision regarding their own care.

Most people who visit an oncologist, especially at a cancer hospital, likely already have at least a strong suspicion that they have cancer. What they are less likely to know is how serious the cancer is, whether it can be treated, and what treatment options are available and recommended for their cancer. Given the complexity of most cancers and cancer treatments, treatment decisions are rarely easy. Patients are often presented with more than one treatment option, the outcomes of treatments are often uncertain, and the treatments can be complex and may involve adherence to a complex regimen. Treatment decisions become even harder when a patient is asked to enroll in a clinical trial. A clinical trial is often the best treatment available for a cancer (National Comprehensive Cancer Network [NCCN], 2008), but the regimens may be complex and difficult for lay people to understand. Thus, it seems reasonable to assume that patients will make the best treatment decisions when the information exchange has been effective; that is, when patients have provided and received the appropriate information relevant to their illness, and when they understand the information they received.

Our theoretical model argues that the effective exchange of information during oncology interactions results in high “convergence” between the participants (Albrecht, Penner, Cline, Eggly, & Ruckdeschel, 2009). Convergence occurs when there is a shared perspective regarding what was said and not said during the interaction, understanding of what was said, and agreement that the conclusions or courses of actions that result from the interaction are correct and/or should be followed. Ongoing work by Eggly, Penner, Albrecht and colleagues strongly suggests that there are racial/ethnic disparities in the quality of exchange of information in

oncology interactions and thus disparities in the level of convergence that result from these interactions.

One aspect of information exchange that Eggly and colleagues have investigated is patient question asking in oncology interactions (Eggly et al., 2006, 2011; Eggly, Penner, Harper, Ruckdeschel, & Albrecht, 2007). The research is based on prior findings that patients' preferred way to gain information about their cancer diagnosis, prognosis, and treatment is to ask questions of their oncologists (Hesse, Arora, Burke-Bedford, & Finney, 2009).

Some of Eggly and her colleagues' work concerns Black–White disparities in question asking. Findings from prior research suggest that the total frequency of questions asked by patients and the proportion of direct questions relative to the total frequency of questions are both related to patients gaining more information (Cegala, McClure, Marinelli, & Post, 2000; Cegala, Street, & Clinch, 2007; Roter, 1984; Gordon, Street, Sharf, & Soucek, 2006b). Eggly et al. (2011) and a team of trained coders observed a large number of video recorded oncology interactions to identify and classify patient and companion questions as either direct (i.e., questions that directly solicit a response, such as “Will I lose my hair?”) or indirect (i.e., questions that imply a desire for information, such as “I wonder if I'll lose my hair like my sister did.”). They examined the total frequency of patient questions and the relative frequency of direct to total patient questions. Blacks asked fewer questions per interaction, and the proportion of direct questions was significantly smaller among Black than White patients. These relationships remained significant when Eggly et al. controlled for patients' age, education, and income.

There is, however, an additional source of Black–White disparities in information exchange that merits consideration: the impact of patients' companions. Findings from our own research (e.g., Eggly et al., 2011; Eggly et al., 2006) demonstrate that companions are active participants in oncology interactions, asking at least as many questions as patients. Eggly et al. (2011) found that patients and companions together asked over twice as many questions as patients alone. This finding leads us to a second source of Black–White disparities in information exchange—the likelihood of having companions present in the interaction.

Over the 8 years we have been studying medical interactions in cancer hospitals in racially/ethnically diverse areas, we have consistently found that Black patients are significantly less likely to bring a companion to oncology interactions than are White patients. Other researchers have found a similar phenomenon (Gordon et al., 2006b; Street & Gordon, 2008). For example, in Eggly et al.'s (2011) sample of 109 cancer interactions, 86% of the White patients brought a companion, but only 40% of the Black patients brought a companion. Pilot data from a more recent study show the same pattern; Whites were about twice as likely to bring a companion as Blacks. As a result, we find that across the interactions we study almost twice as many questions are asked on behalf of Whites in



oncology interactions as are asked on behalf of Blacks. This may not only affect the amount of information Black oncology patients receive during the interaction, but because they are more likely to be alone, it is less likely that Blacks will have someone who can provide social and emotional support as well as assist them with exchanging information with the oncologist.

Thus, with regard to getting information from oncology interactions, Black patients are at a disadvantage in two ways: they ask fewer questions overall, they ask a smaller proportion of direct questions, and because they are much less likely than White patients to have a companion with them in the interaction, fewer questions are asked on their behalf.

Our data do not allow us to speculate on the reasons for the persistent racial difference in the presence of companions during oncology interactions. However, Brondolo, Libereti, Rivera, & Walsemann (2012) suggest that racism at various levels (e.g., institutional, internalized) may undermine Blacks' ability to "form, maintain, and benefit from peer relationships," thus reducing the social capital available to Blacks. It seems possible that the relative dearth of companions who accompany Black cancer patients may provide an example of this process. This would seem to be an interesting line of research to explore.

In a study that we have just completed, we more directly investigated disparities in information exchange in oncology interactions. We studied 65 new cancer patients, their physicians, and the person who accompanied patients to the interactions in a cancer center in Detroit. Immediately after the first interaction with the oncologist, we administered a questionnaire in which we asked all three participants about whether five specific topics were discussed during the interaction; if a topic was discussed, what the physician said about the topic; and finally, how well the patient understood what the physician said. Although our convergence model views the patient–companion, companion–physician, and patient–companion dyads as very important aspects of overall convergence (Albrecht et al., 2009), here we only consider our preliminary findings only on patient–physician dyads and any Black–White disparities in the information exchange within these dyads.

The first issue we examined was whether there were racial/ethnic disparities in the topics that were actually discussed. We assessed agreement among participants (i.e., patients, companions, physicians) regarding whether the following five topics related to cancer were discussed: diagnosis, prognosis, metastasis (i.e., spread), treatment, and side effects associated with treatment. There were no Black–White disparities with regard to whether patients and physicians had discussed diagnosis, prognosis, treatment of the cancer, and metastasis. However, we found a significant Black–White disparity in whether they discussed side effects during interactions in which both the physician and patient reported having discussed treatment. In those interactions where patients and physicians agreed on what had or had not been discussed, when patients were White, side effects were discussed in 97% of

the interactions, but when patients were Black, side effects were discussed in only 62% of the interactions (Eggly et al., 2010).

This finding is consistent with findings from an earlier study by Penner, Eggly, Harper, Albrecht, and Ruckdeschel (2007). In this study, rather than obtaining self-reports, trained coders observed video recordings of oncology interactions with patients who were being asked to enroll in a clinical trial. Coders counted the number of side effects oncologists mentioned and the number of messages they delivered about other aspects of clinical trials (e.g., the fact that patients would receive treatment even if they did not enroll in a particular trial). The results indicated that the oncologists mentioned at least one side effect of the trial treatment regimen during 77% of their interactions with White patients; in contrast, they mentioned side effects during only 44% of interactions with Black patients. Furthermore, in those interactions where patients received some information about side effects and related aspects of the trials, oncologists provided significantly more information about side effects and other aspects of the trial to White than to Black patients.

An ongoing linguistic analysis of a subset of these video recorded interactions by our colleague, Ellen Barton, is showing similar results. Using a quite different methodology, Barton calculated the time per minute oncologists spent telling their patients about various aspects of clinical trials. Barton found that oncologists spent about twice as much time talking about risks associated with the trial with White patients (about 29 seconds per minute) as they did with Black patients (about 14 seconds per minute) (Barton & Marback, 2009).

Returning to our study of self-reports of information exchange in patient–physician dyads, our findings did not show any Black–White disparities in terms of patient–physician agreement regarding what the oncologist said about the specific topics. We did, however, find that Black patients reported significantly less understanding of what physicians said about their diagnosis than did White patients. We also found some other patient characteristics associated with disparities in information exchange. For example, we found that older and less-educated patients were more likely to disagree with physicians with regard to what was said about the severity of side effects. Similarly, relative to other patients, patients who were older had less education reported they understood less of what the physician had told them.

In summary, research, including our own studies, provides substantial empirical evidence of racial/ethnic disparities in patient information seeking during oncology clinical interactions, in the amount of information oncologists actually provided (especially about side effects), and in patient understanding of the information provided. (For similar findings, see Gordon et al., 2006b.)

Thus far, we have considered communication disparities in oncology interactions. Next, we turn directly to disparities in cancer treatments. Specifically, we consider Black–White disparities in the treatment of breast cancer and of prostate

cancer. These are two cancers that can, with proper treatment, often be cured and/or people typically survive them for a very long time.

### **Black–White Disparities in the Treatment of Breast Cancer**

As already mentioned, breast cancer mortality rates are worse among Black women than among White women (Siegel et al., 2011). Cancer researchers have identified several factors that may contribute to these outcomes. Relative to White women, Black women often have more aggressive disease (Gordon, 2003; Thomson, Hole, Twelves, Brewster, & Black, 2001), more advanced disease at the time of initial diagnosis (Naik et al., 2003); a higher incidence of obesity, which is associated with a worse prognosis in breast cancers (Daling et al., 2001; Petrelli, Calle, Rodriguez, & Thun, 2002); and higher rates of other illnesses (Calle et al., 2002; Fleming, Pursley, Newman, Pavlov, & Chen, 2005). However, as is true with other cancers, the higher mortality rates among Black women remain even when these factors are controlled (Griggs, Sorbero, Stark, Heininger, & Dick, 2003).

These facts persuaded Griggs and her colleagues to study possible disparities in the treatment of breast cancer. Griggs and her colleagues are not, of course, the first or the only researchers to study ethnic disparities in the treatment of breast cancer. There is considerable evidence that patient race/ethnicity is associated with disparities in the probability of surgery, use of radiation, and use of chemotherapy. Black women (and lower SES women) receive poorer quality care in all these areas (Bach, Cramer, Warren, & Begg, 1999; Michalski & Nattinger, 1997). However, it is difficult in these studies to determine the relative role of patients and oncologists in contributing to these disparities. Indeed, some researchers have hypothesized that these treatment disparities reflect the effects of patient attitudes and behaviors regarding their treatment choices and adherence to treatment regimens. This perspective is consistent with other research that has identified ethnic differences in health-related beliefs, attitudes, and behaviors (Smedley et al., 2003).

The work of Griggs and her colleagues has more directly examined how oncologists' treatment decisions may affect the kinds of treatment women receive for breast cancer, specifically the levels and kinds of chemotherapy given to breast cancer patients. Specifically, Griggs and her associates have studied decisions about the amount of a drug (dose level) to be administered in adjuvant chemotherapy. Because we expect that most readers of this journal may not be familiar with treatments for breast cancer, a brief explanation of adjuvant chemotherapy is in order.

Chemotherapy can be used to treat breast cancer before surgery, typically to reduce the size of a tumor; this is called primary systemic (or neoadjuvant)

chemotherapy. Chemotherapy that is given after apparently successful breast surgery is called adjuvant chemotherapy. In this case, no cancer can be detected, but chemotherapy is intended to reduce the probability of a recurrence of the cancer. Adjuvant chemotherapy, if properly administered, can quite substantially reduce the risk of breast cancer recurrence (Early Breast Cancer Trialists' Collaborative Group, 2005). If an oncologist decides that a patient is an appropriate candidate for adjuvant chemotherapy, he/she must decide on the correct medications and dose for this patient. With regard to dose, there are widely accepted clinical guidelines. These guidelines are primarily based on body surface area, which is calculated using the patient's height and weight and expressed in square meters (Griggs, Sorbero, & Lyman, 2005). The dose level is extremely important because there is substantial evidence that adjuvant chemotherapy doses that are 85% or less of the standard or recommended guidelines are substantially less effective in the prevention of the recurrence of breast cancer (Bonadonna & Valagussa, 1981; Bonadonna, Valagussa, Moliterni, Zambetti, & Brambilla, 1995).

In a series of prospective and retrospective studies, Griggs and her associates (Griggs et al., 2003, 2005, 2007a, 2007b) asked whether women from certain groups are at an increased risk of receiving reduced doses of adjuvant chemotherapy. Importantly, Griggs et al. (2003) have examined data on the initial doses that oncologists plan to give their patients, because decisions about initial dose levels reflects a physician's dose selection independent of patient's side effects in response to previous chemotherapy cycles. (Initial dose level decisions are also strongly associated with dose intensity over the entire course of treatment.) Griggs et al.'s logic is that, by using initial planned doses as their primary outcome measure, they are able to eliminate or minimize the influence of patient's physical or psychological reactions to a chemotherapy regimen on oncologists' decisions about the best chemotherapy regimen for that patient.

In the first of these studies, Griggs et al. (2003) examined the medical records of almost 500 women treated at 10 different treatment sites in two geographical areas. Patient SES was not assessed on an individual basis; rather the researchers used patients' addresses and census tract data to determine the SES characteristics of the neighborhood in which a patient lived.

Griggs and her colleagues used established guidelines to determine what dose should be recommended for each patient, based on her height and weight and resultant body surface area. The actual dose level selected by the oncologist was divided by the recommended dose. If the resultant ratio was 1.0, the individual oncologist's selection was exactly the same as the recommended dose. Based on the research cited earlier on dose-response effectiveness, a ratio of 0.80 or less (i.e., 80% or less of the recommended dose) was considered an instance of under dosing. In addition to this measure, the researchers also examined the recommended duration of adjuvant chemotherapy for each patient to the duration actually chosen by the oncologist and computed a comparable ratio. They also

multiplied the planned dose by the planned duration to obtain an estimate of the total amount of chemotherapy planned for a patient.

Griggs et al. compared the doses planned for Black and for White patients. Because there were a number of differences between Black and White patients that might affect the dosing decisions, Griggs et al. controlled for factors such as tumor characteristics, other medical conditions, obesity, SES, and whether a patient had insurance. Even when these variables were controlled, Black women were significantly more likely to be under dosed than White women. That is, the ratio of planned to recommended dose was significantly lower for Black patients than for White patients. Only 61% of the Black patients received a dose proportion of 0.80 (i.e., 80% of the recommended dose) or greater; in contrast, 72% of the White patients received a dose this great or greater. There were no disparities in the planned duration of treatment, but there were disparities when planned dose was multiplied by duration. The total planned dose for Black patients was significantly less than for White patients. In this study, patients who lived in census tracts with income above the sample median were also less likely to have first cycle dose reductions.

Subsequent studies by Griggs and her colleagues have replicated and extended the findings with regard to patient ethnicity and SES. For example, Griggs et al. (2007b) conducted a prospective study on women about to start adjuvant chemotherapy and found a marginal effect ( $p < .06$ ) for patient race/ethnicity; as before, Blacks were more likely to be under dosed than Whites. Significant effects were also found for SES. Lower SES patients were significantly more likely to receive less than 85% of the recommended dose than were higher SES patients.

Finally, Griggs et al. (Griggs et al., 2007a) looked at disparities in the kinds of drugs used in chemotherapy regimens. These authors compiled an exhaustive list of the recommended chemotherapy regimens (i.e., specific drugs and drug combinations) for adjuvant chemotherapy; then they examined the regimens actually used with 957 breast cancer patients. If a regimen was not included in the list, it was considered "nonstandard." Griggs et al. found that, whereas 11% of the White patients from a national sample received a chemotherapy regimen that differed from the standard, recommended chemotherapy regimens for breast cancer, 19% of the Black patients received nonstandard chemotherapy. In this study, Griggs et al. also found that patient education and age were also associated with treatment disparities. People who had less education and were older were more likely to receive nonstandard chemotherapies.

In summary, across four different studies, Griggs et al. found that Black breast cancer patients were more likely to be underdosed or given nonstandard chemotherapy regimens than were White breast cancer patients. The results are not just statistically significant; these findings also have clear implications for mortality rates among Black breast cancer patients. As already mentioned, reductions in chemotherapy doses at the level identified by Griggs et al. as nonstandard (less

than 85% of the recommended dose), result in a much higher incidence of breast cancer recurrence (Goldhirsch & Gelber, 1994; Morrow, Siegel, Boone, Lawless, & Carter, 2002). Of course, this all begs the question of why there is this treatment disparity. Again, we defer a discussion of this question until the last section in this article and turn to disparities in the treatment of prostate cancer.

### **Black–White Disparities in the Treatment of Prostate Cancer**

Blacks are more likely than Whites to die of most cancers; however, the largest Black–White differences in mortality/survival rates are for prostate cancer (Allen, Kennedy, Wilson-Glover, & Gilligan, 2007). Blacks are more than twice as likely to die from prostate cancer than are Whites (Siegel et al., 2011). Blacks are more likely to be diagnosed with a higher grade (more aggressive) and/or a higher stage (more advanced) prostate cancer than are Whites (Hoffman et al., 2001; Underwood et al., 2005). Survival differences between Black and White men with prostate cancer are partially due to Blacks having a more advanced stage at diagnosis and differences in tumor characteristics, but treatment disparities also explain survival differences between Black and White men diagnosed with equal disease (Bach et al., 2002; Wong et al., 2009).

In this section, we consider the research on Black–White disparities in the treatment of prostate cancer. As we did in the previous section on breast cancer, we begin with a brief introduction to prostate cancer diagnosis and treatment. Although many men do die of prostate cancer (9% of all cancer-related deaths), few men with prostate cancer die within 5 years of diagnosis; rather, the majority of men diagnosed with prostate cancer ultimately die of other causes. However, some men either are diagnosed with or go on to develop metastatic prostate cancer (i.e., the cancer spreads), which has a much lower 5-year survival rate than localized disease (33.5% vs. 99.3%) (Jemal et al., 2004).

The aggressiveness of the cancer is graded from a 2 to 10 on a scale called the Gleason score. Among patients with clinically localized prostate cancer, mortality varies significantly with a patient's age and where the cancer falls on this scale; younger age and higher Gleason scores are significantly associated with greater mortality risk (Albertsen, Hanley, & Fine, 2005). Of course, mortality rates are even higher among men whose cancer has spread beyond the prostate region (Jemal et al., 2004).

The recommended treatment options for prostate cancer vary and depend on a number of factors. These include the aggressiveness and amount of cancer at diagnosis, a patient's age and overall medical condition, and the patient's treatment preferences (NCCN, 2009). If the prostate cancer is relatively slow-growing and/or patient is older, it is fairly common to engage in "watchful waiting," also referred to as "active surveillance" (Bastian et al., 2009). This option means that

initially the patient does not receive any “definitive” treatment (e.g., surgery, radiation, or some combination); rather his cancer is closely monitored to see how rapidly it grows. If it appears that cancer is beginning to grow or spread, then definitive treatments intended to cure the cancer are generally started (Zeliadt et al., 2006).

Definitive treatments include surgery, radiation, and cryotherapy (destroying the cancer by freezing it). These treatments may have different side effects, some of which can be significant (e.g., incontinence, erectile dysfunction) (Sanda et al., 2008). Also, there is professional disagreement as to the relative effectiveness of treatments. Thus, there may be substantial subjectivity in patient and physician decisions about whether, when and how to treat prostate cancer. This subjectivity, at least theoretically, increases the probability of treatment disparities based on nonmedical factors. The third and fourth authors of this article, Underwood and Orom, and others have examined Black–White disparities in prostate cancer treatments.

We begin with the decision to treat. Shavers and her colleagues (Shavers et al., 2004a) have looked at the relative frequency of watchful waiting (i.e., no definitive treatment) among newly diagnosed Black and White prostate cancer patients. Shavers et al. found that after controlling for factors such as patient age, comorbidities, stage of the cancer, and life expectancy, Black men were still about 1.4 times more likely to receive watchful waiting than were White men. Among the Black men, those with more comorbidity and less education (based on census tract data) were more likely to receive watchful waiting; no similar effects were found among the White men in the study. In a follow-up study, Shavers et al. (2004b) looked at medical care among Black and White men who were receiving watchful waiting. In general, Black men received less medical monitoring and had longer median times from diagnosis to receipt of a medical monitoring visit or procedure than did White men. Furthermore, during the 60 months following their diagnosis, 6% of the Black men did not receive any medical monitoring visits or procedures. In contrast, only 1% of the White men had no medical monitoring visits or procedures during this same time period. Controlling for sociodemographic or clinical variables did not reduce this difference. (It is also worth noting that Shavers et al. found the same kinds of disparity between White and Hispanic men.)

Next, we consider possible disparities among men who receive definitive treatment for their localized prostate cancer. As we have already mentioned, there are professional disagreements as to which specific definitive treatments are more effective in treating prostate cancer. However, there is general agreement that once prostate cancer begins to progress, treatment is better than no treatment (Wong et al., 2006).

There are substantial differences in the overall treatment rates for Black and White men with prostate cancer. Schapira, McAuliffe, and Nattinger (1995), using a subset of the National Cancer Institute’s national cancer database (Surveillance

Epidemiology End Results [SEER]), Altekruse et al., 2010), found that Black men were half as likely as White men to receive definitive therapy (surgery or radiation) for their prostate cancer. Harlan, Brawley, Pommerenke, Wali, and Kramer (1995) examined the entire SEER database from 1984 to 1991 and found that among men 50–69 who were diagnosed with localized prostate cancer, 67% of Black men and 80% of White men received a radical prostatectomy (i.e., surgical removal of the prostate). In a study of men in the Detroit area with prostate cancer, Schwartz et al. (2009) found that among men whose cancer had spread beyond the prostate, Black men were twice as likely as White men (44–22%) not to receive definitive treatment for their cancer. In this context, it is important to note that if Black men receive the same treatment for the same grade and stage prostate cancer as do Whites, the two groups' survival rates are the same (Underwood et al., 2004a).

Schwartz et al. (2009) also analyzed the causes of mortality in their sample. Among both men with localized cancer and those whose cancer had spread outside the prostate region, variables such as patient age and tumor grade accounted for about 10% of the Black–White variability in mortality. Black–White differences in SES also contributed to differences in mortality. But even after these two classes of variables were controlled, Black–White disparities in treatment still accounted for significant additional variability in mortality rates. Thus, reducing the Black–White treatment disparities would substantially reduce mortality rates among Black men with prostate cancer.

Underwood and his colleagues (Underwood et al., 2004b) have more directly explored the relationship between patient race/ethnicity and treatments received. The primary question asked by these investigators was whether Black–White treatment disparities differed as a function of the grade or severity of their cancer. Underwood et al. used the SEER database to obtain treatment data on 140,000 men diagnosed with clinically localized prostate cancer (i.e., cancer that had not spread to other parts of the body). Although they were interested in treatment disparities among White, Black, and Hispanic men, we will focus primarily on the Black–White disparities they identified. These researchers used prostate cancer grade at diagnosis to classify the aggressiveness of the men's cancer and divided the type of treatment the men received into a definitive treatment group or a nondefinitive treatment group (watchful waiting or hormonal therapy).

In their analysis, Underwood et al. controlled for the patients' marital status, age at diagnosis, and region of the country of diagnosis. They used White men diagnosed with moderate-grade prostate cancer as the standard for comparison with other groups. Among men diagnosed with well-differentiated (low risk) prostate cancer, all racial/ethnic groups were less likely to receive definitive therapy compared to White men diagnosed with moderate-grade prostate cancer (i.e., the standard). This would be expected because men diagnosed with well-differentiated prostate cancer have a low risk of dying from prostate cancer even



if they do not receive definitive treatment (Lu-Yao et al., 2009). Among men diagnosed with poorly differentiated grade (high risk) prostate cancer, Whites were just as likely to receive definitive treatment as were White men diagnosed with moderate-grade prostate cancer. In contrast, Black men with high-risk cancer were 50% less likely than White men with moderate-grade cancer to receive definitive treatment. This finding is extremely important because, compared to men diagnosed with moderately differentiated prostate cancer, men diagnosed with poorly differentiated prostate cancer are 2.5 times more likely to die from prostate cancer when not receiving nondefinitive treatment (Lu-Yao et al., 2009). No Black–White differences in receiving definitive treatment were noted among men diagnosed with well-differentiated grade (low risk) prostate cancer. However, among men diagnosed with moderate-grade prostate cancer, Black men were 36% less likely to receive definitive treatment than their White counterparts.

In summary, Underwood and colleagues' findings indicate that there are Black–White disparities in the treatment of prostate cancer and that these disparities actually increase as men are diagnosed with more aggressive cancers. Other research (e.g., Zeliadt, Potosky, Etzioni, Ramsey, & Penson, 2004) shows that these treatment disparities cannot be explained by differences in patients' SES or the presence of other illnesses (i.e., comorbidities) that might affect treatment decisions.

### **Causes of Black–White Cancer Treatment Disparities**

In this final section, we consider some possible explanations of Black–White disparities in the quality of communication and information exchange during oncology interactions and in the treatments provided to Black and White cancer patients. As far as we are aware, there is presently a dearth of research that directly and explicitly addresses the causes of disparities in the treatment of cancer. Therefore, we place cancer treatment within the framework of research on Black–White disparities in treatment for medical problems in general and extrapolate from this research to disparities in cancer. Our discussion of possible causes uses the same organizational framework as the 2003 IOM report on general health care disparities (Smedley et al., 2003).

In this report, the Institute of Medicine (IOM) panel proposed three related causes of Black–White disparities in health care. The first of these was at the system level: because of the way health care is financed in the United States, there may be differences in the overall quality of health care Blacks and Whites receive. One source of this disparity may be disparities in health insurance. Currently, for most people under 65, health care is paid for directly by patients or indirectly through private insurance companies, whose fees are paid by employers and/or patients. In the United States, the best health care usually occurs when the payer is a private

insurance company (Smedley et al., 2003). Whereas 71% of Whites are covered by such plans, only 54% of Blacks have such coverage (NCHS, 2008).

There is also evidence to suggest that medical facilities with a high percentage of Black patients may provide relatively poorer care to all of their patients. For example, using a sample of over 140,000 Medicare patients, Barnato, Lucas, Staiger, Wennberg, and Chandra (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 acute myocardial infarction” (p. 303). It seems very unlikely that Blacks (or anyone else) actually choose to go to lower quality hospitals. It seems much more likely that perhaps because of segregated housing patterns, limited means of transportation, and other similar social and physical barriers, Black patients are essentially forced to choose a health care facility on the basis of proximity and convenience rather than on their perceptions of the quality of care the facility provides.

A system-level explanation such as health care financing may have some intuitive appeal, but, at best, it provides only a partial explanation of health care disparities. Numerous studies find disparities in health status exist even when Blacks and Whites have the same insurance plans and use the same health care systems and medical facilities (Smedley et al., 2003). For example, Trivedi, Zaslavsky, 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, enrolled in 151 different health plans, each of which was independently rated for quality. The researchers found no relation between the overall quality of a health plan and the relative health status of Black and White patients. However, they did find very large health status disparities among Black and White patients enrolled in the same health plans.

Furthermore, health care system disparities do not explain the disparities in the quality of communication during racially discordant and racially concordant medical interactions that we have discussed. Most of the studies we cited in our earlier discussion were conducted in facilities where the same physicians saw Black and White patients in the same setting. Thus, while system-level factors almost certainly contribute to health disparities, there are clearly additional causes that we need to consider.

This brings us to the second possible cause, which the IOM called patient-level factors. Greatly simplified, the IOM panel proposed that certain patient attitudes and behaviors might negatively affect the outcomes of medical interactions and, thus, the health status of Black patients. There are many kinds of patient-related variables that might affect the health status of Black patients, but we limit our discussion to ways in which Black patients’ experiences as members of a stigmatized racial/ethnic group and as targets of prejudice and discrimination might affect the quality of their medical interactions with non-Black providers and outcomes of

these interactions. As we discuss some relevant research findings, we remind the reader that for most Black patients, medical interactions are racially discordant (Penner et al., 2010a).

We begin with Black patients' experiences with and resultant perceptions of the health care system in the United States. Malat and Hamilton (2006) reported that 57% of Blacks in a national survey said that discrimination occurs "often" or "very often" in their interactions with White physicians. Other surveys find that Blacks are significantly more likely than Whites to believe that their race negatively affects their health care (Thompson, Valdimarsdottir, Winkel, Jandorf, & Redd, 2004) and that Blacks are less trusting of their physicians than are Whites (Halbert, Armstrong, Gandy, & Shaker, 2006).

Independent of these predispositions, there is reason to believe that the dynamics of interracial interactions may influence medical encounters between Black patients and Whites health care providers. Specifically, Dovidio et al. (2008) proposed that when Blacks and Whites interact, because of a desire not to be perceived as prejudiced, many Whites pay great attention to and try to shape conscious intentions and controllable behaviors that might communicate racial bias. However, Whites may still behave differently with Blacks than with Whites on dimensions that are less controllable (e.g., nonverbal behaviors) and Blacks, because of their minority status and certain sociohistorical factors (e.g., less social power) may be more attentive to such behaviors than are Whites (Richeson & Shelton, 2005). For example, Dovidio, Kawakami, and Gaertner (2002) had Black confederates, trained to act the same across all interactions, and naïve White participants interact in interracial dyads. Following the interactions, both parties rated the White person's friendliness during the interaction. Dovidio et al. found that the White participants' ratings of their own friendliness during the interaction correlated significantly with their (more controllable) verbal behaviors during the interactions, but the Black confederates' ratings of the White participants' friendliness were correlated with the Whites' nonverbal behaviors during the interaction. Importantly, this latter rating of the Whites' friendliness was also correlated with the Whites' own implicit attitudes toward Blacks. This finding is consistent with other research that shows Blacks are better able than Whites to detect both explicit and implicit racial bias in Whites and more accurate than Whites in identifying the emotions of people from a different racial/ethnic group (Pearson et al., 2008; Richeson & Shelton, 2005). If we extrapolate from these studies in nonmedical settings to racially discordant medical interactions, these findings suggest that Black and White participants in the same medical interaction could leave the interaction with very different impressions of the other person's thoughts and feelings during the interactions. Their respective impressions would quite reasonably affect their subsequent reactions to the interaction.

It is also possible that some of the negative outcomes of racially discordant medical interactions we previously discussed (Egely et al., 2011; Gordon et al.,

2006a) may reflect the influence of the Black patients' racial identity and their past experiences with racism. That is, such experiences may affect their own verbal and nonverbal behaviors and providers' responses during and after the interactions.

There is also some evidence that specific kinds of race-related attitudes and beliefs may affect racially discordant medical interactions and their outcomes. One is trust of the provider and the health care system in general. As noted earlier, overall Blacks are less trusting of the health care system than are Whites. O'Malley, Sheppard, Schwartz, and Mandelblatt (2004) studied the factors that affected Black women's usage of preventive services (e.g., cancer screenings). They found that higher trust in the health care provider was significantly associated with greater use of recommended preventive services; this relationship remained after controlling for the effects of insurance status and patient characteristics. (Also see Street, O'Malley, Cooper, & Haidet, 2008)

Another important factor is perceived discrimination. Bird and Bogart (2001) found poorer adherence to antiretroviral medications among Black patients who perceived that they were the targets of discrimination. More recently, Penner et al. (2009) measured perceived past discrimination among low income Black patients just prior to their visit with a physician at a primary care facility. They examined the correlation between the reported frequency of past discrimination with patients' reactions to the medical interactions and their compliance with physician recommendations. The more past discrimination the Black patients reported experiencing, the less satisfied they were with the interactions, the less likely they were to report adherence with the physicians' recommendations at 4 and 16 weeks after the interaction and the poorer their health at 4 and 16 weeks. A mediational analysis indicated that the relationship between perceived discrimination and health at 16 weeks was significantly mediated by adherence to the physicians' recommendations.

In summary, we believe that patient-level factors (i.e., patients' experiences, attitudes, and behaviors) play a direct and indirect role in the quality of the medical care they receive. However, we strongly caution against blaming the victim; in this case, the patient. As Penner et al. (2009) noted, distrust and perceptions of racism and racial discrimination among Blacks are primarily rooted in personal experiences of discrimination. Racism and racial discrimination in America are still pervasive, presenting a challenge to Blacks on a regular basis. Thus, we must emphasize that the root of this possible cause of medical treatment disparities is ultimately the subtle and sometimes not-so-subtle racism Blacks confront on an individual, social, and institutional level that are reflected in their attitudes, beliefs, and behaviors. Accordingly, solutions to treatment disparities may require some interventions directed at individual patients, but ultimately what is required are interventions targeting health care providers, the health care system, and society in general as well. In this context, we again refer the reader to the article by Brondolo

et al. (2012). It suggests other, but in our view, complementary mechanisms through which racism may diminish the quality of Black–White interactions.

The third and final cause of racial disparities identified by the IOM report was at the level of the provider. This factor involves decisions and behaviors exhibited by health care professionals that may result in Blacks receiving poorer health care than Whites. The IOM committee explicitly proposed that provider stereotyping of and bias toward minority group members may produce poorer treatment for minority group patients. This proposal elicited strong reactions from health care providers (Epstein, 2005), who argued that the overwhelming majority of health care providers reject overt and blatant forms of racial prejudice in both their personal and professional lives. We have no reason to dispute this claim; however, as we know, contemporary prejudice and stereotyping can be expressed in subtle and indirect ways that escape provider awareness. It is these more subtle forms of racism that the IOM Committee suggested play a major role in Black–White disparities in health care.

The social psychology research literature on the effects of subtle or implicit/automatic forms of racial prejudice on behaviors toward Blacks would strongly suggest that provider bias does indeed affect medical interactions and treatment decisions (Penner et al., 2010a). However, only a small number of studies have directly investigated this relationship using experimental paradigms. One example of such research on Black–White treatment disparities was conducted by Schulman et al. (1999). Primary care physicians 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. found that Black women were significantly less likely to be referred for further testing than were White men. However, it must be noted that a more recent study using standardized patients (i.e. actors) showing symptoms of coronary heart disease failed to produce any evidence that patient race influenced diagnosis or treatment recommendations (Arber et al., 2006).

van Ryn and associates (van Ryn, 2002; van Ryn, Burgess, Malat, & Griffin, 2006; van Ryn & Burke, 2000) proposed a social–cognitive model of how patient race/ethnicity influences physicians' treatment decisions. Specifically, these authors posited that perceived patient ethnicity constitutes a potent means whereby physicians place patients in social categories, which activate implicit and explicit stereotypes about individuals who belong to these categories. These stereotypes influence physicians' interpretations of patients' symptoms, which then affect physicians' decisions about diagnosis and treatment. Consistent with this model, van Ryn et al. found that physicians stereotyped Black cardiac patients as less educated and less likely to comply with medical recommendations than Whites. These stereotypes mediated physicians' decisions about the suitability of Black patients for coronary bypass surgery. (Also see Bogart, Catz, Kelly, & Benotsch, 2001).

Finally, two recent studies have specifically focused on how providers' implicit attitudes affect treatment decisions and medical decisions. Green et al. (2007) first assessed physicians' explicit and implicit attitudes toward Blacks and Whites. Following this assessment, they presented the physicians with vignettes about hypothetical emergency room patients with symptoms of serious heart problems. The patients in the vignettes were either Black or White. The physicians showed no bias against Blacks on the measure of explicit or overt bias. However, on the implicit measure (the *Implicit Association Test*), physicians' attitudes were more negative toward Blacks than Whites and they were more likely to associate uncooperativeness with Blacks than Whites. More importantly, Green et al. (2007) found that physicians' implicit biases were strongly associated with their recommendations to give patients the appropriate treatment; physicians who were more implicitly biased were less likely to recommend the appropriate treatment for Black patients.

Finally, Penner et al. (2010b) studied how physician explicit and implicit anti-Black bias affected their own and their patients' reactions to primary care medical interactions. In a primary care facility, we measured physicians' explicit and implicit anti-Black bias prior to patient interactions. Then following the interactions, we measured the physicians' and their Black patients' reactions to one another and the interaction. We found some evidence that physicians' explicit and implicit bias affected how much they involved patients in treatment decisions and perceived closeness to the patient. However, the major effects of physicians' implicit bias were seen in their patients' reactions to the physicians. Of special interest were patient responses to physicians who fit the profile of aversive racists (Dovidio & Gaertner, 2004; Gaertner & Dovidio, 1986); that is, relative to the other physicians, these physicians scored quite low in explicit prejudice, but quite high in implicit prejudice. Patients reacted most negatively to these physicians; specifically, patients of these physicians reported less satisfaction, less perceived closeness, and lower estimates of warmth and friendliness than patients of the other groups of physicians. Other research has suggested that the patient responses we measured are associated with longer term medical outcomes of physician–patient interactions in general and oncology interactions in particular (Epstein & Street, 2007). Specifically, more negative patient reactions to interactions have been found to be significantly correlated with poorer patient outcomes related to the interactions. Finally, in a subsequent analysis (Hagiwara, Penner, Eggly, & Albrecht, 2011), we found that patients talked significantly less when they interacted with aversive racist physicians than with other physicians.

### Summary/Conclusion

There are substantial and important Black–White disparities in the quality of communication and information exchange during oncology interactions and in the quality of the treatments Black and White cancer patients receive. To be sure,

there are many instances in which there are no Black–White disparities in these interactions and treatments, but when there is a disparity, it is without exception Black patients who are disadvantaged, relative to the Whites. As we noted in the introduction to this article, most research on health care disparities, including our own, has focused on Black–White disparities in the United States. But as we also noted earlier, health care disparities due to some social or group characteristic is not what the Nobel Laureate Gunnar Myrdal once called an “American Dilemma.”

Among major industrial countries, the United States is unique in the extent to which its health care system is privatized. There is, of course, ample evidence that structural differences in the quality of health care systems available to patients contribute substantially to health disparities (Smedley et al., 2003). Thus, the financial underpinnings of a country’s health care system can play a major role in health disparities. However, public health data from a large number of countries suggest that disadvantaged ethnic/racial minorities systematically experience worse health and receive poorer health care than members of majority ethnic/racial groups throughout the world, across political systems, geographic regions, and health care financing systems. Thus, we would argue that the basic processes responsible for the disparities in cancer care for Blacks in the United States are probably operative around the world, although certainly they may differ in the specific forms they take and the extent to which they exist. Moreover, it is extremely important to recognize that the consequences of health care disparities extend beyond possible emotional and psychological distress in patients who experience these kinds of inequities. Consider, for example, Bach et al.’s (2002) work on cancer-related deaths in the United States. After an extensive meta-analysis, Bach et al. concluded that an unknown, but certainly substantial portion of higher mortality and lower survival rates among Blacks with cancer, relative to Whites with this disease, is due to preventable Black–White health care disparities. Indeed, when cancer treatment disparities were controlled in the meta-analysis, the differences in mortality/survival became very small. Given that these disparities are preventable, it is the responsibility of professionals who provide and study health care to strive to reduce these life-threatening disparities.

## References

- Albertsen, P. C., Hanley, J. A., & Fine, J. (2005). 20-year outcomes following conservative management of clinically localized prostate cancer. *Journal of the American Medical Association, 293*(17), 2095–2101. doi:10.1001/jama.293.17.2095.
- Albrecht, T. L., Penner, L. A., Cline, R. J., Eggly, S. S., & Ruckdeschel, J. C. (2009). Studying the process of clinical communication: Issues of context, concepts, and research directions. *Journal of Health Communication, 14*(Suppl 1), 47–56. doi:10.1080/10810730902806794.



- Allen, J. D., Kennedy, M., Wilson-Glover, A., & Gilligan, T. D. (2007). African-American men's perceptions about prostate cancer: Implications for designing educational interventions. *Social Science and Medicine*, 64(11), 2189–2200. doi:10.1016/j.socscimed.2007.01.007.
- Altekruse, S. F., Huang, L., Cucinelli, J. E., McNeel, T. S., Wells K. M., & Oliver, M. N. (2010). Spatial patterns of localized-stage prostate cancer incidence among white and black men in the southeastern United States, 1999–2001. *Cancer Epidemiological Biomarkers and Prevention*, 19, 1460–467. doi:10.1158/1055-9965.EPI-09-1310.
- Arber, S., McKinlay, J., Adams, A., Marceau, L., Link, C., & O'Donnell, A. (2006). Patient characteristics and inequalities in doctors' diagnostic and management strategies relating to CHD: A video-simulation experiment. *Social Science and Medicine*, 62(1), 103–115. doi:10.1016/j.socscimed.2005.05.028.
- Arora, N. K. (2003). Interacting with cancer patients: The significance of physicians' communication behavior. *Social Science and Medicine*, 57(5), 791–806.
- Arora, N. K., Hesse, B. W., Rimer, B. K., Viswanath, K., Clayman, M. L., & Croyle, R. T. (2007). Frustrated and confused: The American public rates its cancer-related information-seeking experiences. *Journal of General Internal Medicine*. 23(3), 223–228. doi:10.1007/s11606-007-0406-y.
- Bach, P. B., Cramer, L. D., Warren, J. L., & Begg, C. B. (1999). Racial differences in the treatment of early-stage lung cancer. *New England Journal of Medicine*, 341(16), 1198–1205. doi:10.1056/NEJM 199910143411606.
- Bach, P. B., Schrag, D., Brawley, O. W., Galaznik, A., Yakren, S., & Begg, C. B. (2002). Survival of blacks and whites after a cancer diagnosis. *Journal of the American Medical Association*, 287(16), 2106–2113. doi:10.1001/jama.287.16.2106.
- Barnato, A. E., Lucas, F. L., Staiger, D., Wennberg, D. E., & Chandra, A. (2005). Hospital-level racial disparities in acute myocardial infarction treatment and outcomes. *Medical Care*, 43(4), 308–319.
- Barton, E., & Marback, R. (2009). Bodies of the urban public, *Wayne State University Humanities Center Symposium on the Representation of Health and Disease in the City*, Detroit.
- Bastian, P. J., Carter, B. H., Bjartell, A., Seitz, M., Stanislaus, P., Montorsi, F., Stief, C. G., Schröder F. (2009). Insignificant prostate cancer and active surveillance: From definition to clinical implications. *European Urology*, 55(6), 1321–1330. doi:10.1016/j.eururo.2009.02.028.
- Bird, S. T., & Bogart, L. M. (2001). Perceived race-based and socioeconomic status (SES)-based discrimination in interactions with health care providers. *Ethnicity and Disease*, 11(3), 554–563.
- Bogart, L. M., Catz, S. L., Kelly, J. A., & Benotsch, E. G. (2001). Factors influencing physicians' judgments of adherence and treatment decisions for patients with HIV disease. *Medical Decision Making*, 21(1), 28–36. doi:10.1177/0272989X0102100104.
- Bonadonna, G., & Valagussa, P. (1981). Dose-response effect of adjuvant chemotherapy in breast cancer. *New England Journal of Medicine*, 304(1), 10–15.
- Bonadonna, G., Valagussa, P., Moliterni, A., Zambetti, M., & Brambilla, C. (1995). Adjuvant cyclophosphamide, methotrexate, and fluorouracil in node-positive breast cancer: The results of 20 years of follow-up. *New England Journal of Medicine*, 332(14), 901–906. doi:10.1056/NEJM199504063321401.
- Braveman, P. (2006). Health disparities and health equity: Concepts and measurement. *Annual Review of Public Health*, 27, 167–194. doi:10.1146/annurev.publhealth.27.021405.102103.
- Brondolo, E., Libertti, M., Rivera, L., & Walsemann, K. M. (2012). Racism and social capital: The implications for social and physical well being. *Journal of Social Issues*, 68(2), 358–384. doi: 10.1111/j.1540-4560.2011.01752.x
- Byrd, W. M., & Clayton, L. A. (2000). *An American health dilemma: Race, medicine, and healthcare in the United States 1900–2000*. New York: Routledge.
- Byrd, W. M., & Clayton, L. A. (2002). *An American health dilemma: A medical history of African Americans and the problem of race*. New York: Routledge.
- Calle, E. E., Rodriguez, C., Jacobs, E. J., Almon, M. L., Chao, A., McCullough, M. L., Feigelson, H. S., & Thun, M. J. (2002). The American Cancer Society Cancer Prevention Study II Nutrition Cohort: rationale, study design, and baseline characteristics. *Cancer*, 94, 2490–2501.



- Cegala, D. J., McClure, L., Marinelli, T. M., & Post, D. M. (2000). The effects of communication skills training on patients' participation during medical interviews. *Patient Education and Counseling, 41*(2), 209–222.
- Cegala, D. J., Street, R. L., Jr., & Clinch, C. R. (2007). The impact of patient participation on physicians' information provision during a primary care medical interview. *Health Communication, 21*(2), 177–185.
- Centers for Disease Control and Prevention. (2005). Breast cancer screening and socioeconomic status—35 metropolitan areas, 2000 and 2002. *Mortality and Morbidity Weekly Report, 54*(9), 981–985.
- Cooper-Patrick, J. J., Gonzales, J. J., Vu, H. T. R., Powe, N. R., Nelson, C., & Ford, D. E. (1999). Race, gender, and partnership in the patient-physician relationship. *Journal of the American Medical Association, 282*, 583–589.
- Daling, J. R., Malone, K. E., Doody, D. R., Johnson, L. G., Gralow, J. R., & Porter, P. L. (2001). Relation of body mass index to tumor markers and survival among young women with invasive ductal breast carcinoma. *Cancer, 92*(4), 720–729. doi:10.1002/1097-0142(20010815)92:43.0.CO;2-T.
- Dilley, J. A., Simmons, K. W., Boysun, M. J., Pizacari, B. A., & Stark, M. J. (2010). Demonstrating the importance and feasibility of including sexual orientation in public health surveys: Health disparities in the Pacific Northwest. *American Journal of Public Health, 100*, 460–467. doi:10.2105/AJPH.2007.130336.
- Dorling, D., Mitchell, R., & Pearce, J. (2007). The global impact of income inequality on health by age: An observational study. *British Medical Journal, 335*, 833–834. doi:10.1136/bmj.39349.507315.DE.
- Dovidio, J. F., & Gaertner, S. (2004). Aversive racism. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 36, pp. 1–51). San Diego: Academic Press.
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology, 82*(1), 62–68. doi:10.1037/0022-3514.82.1.62.
- Dovidio, J. F., Penner, L. A., Albrecht, T. L., Norton, W. E., Gaertner, S. L., & Shelton, J. N. (2008). Disparities and distrust: The implications of psychological processes for understanding racial disparities in health and health care. *Social Science and Medicine, 67*(3), 478–486. doi:10.1016/j.socscimed.2008.03.019.
- Early Breast Cancer Trialists' Collaborative Group. (2005). Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: An overview of the randomised trials. *Lancet, 365*, 1687–1717. doi:10.1016/S0140-6736(05)66544-0.
- Eggle, S., Harper, F. W. K., Penner, L., Gleason, M., Foster, T., & Albrecht, T. L. (2011). Variation in question asking during cancer clinical interactions: A potential source of disparities in access to information. *Patient Education and Counseling, 82*, 63–68. doi:10.1016/j.pec.2010.04.008.
- Eggle, S., Penner, L. A., Greene, M., Harper, F. W., Ruckdeschel, J. C., & Albrecht, T. L. (2006). Information seeking during “bad news” oncology interactions: Question asking by patients and their companions. *Social Science and Medicine, 63*(11), 2974–2985. doi:10.1016/j.socscimed.2006.07.012.
- Eggle, S., Penner, L. A., Harper, F. W., Ruckdeschel, J. C., & Albrecht, T. L. (2007). Question asking by black and white patients and companions during clinical trial offers. *Proceedings of American Association of Cancer Researchers Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved*, Atlanta, GA.
- Eggle, S., Penner, L. A., Harper, F. W. K., Zhdanova, L., Gonzalez, R., & Albrecht, T. L. (2010). Perceptions of information provided by oncologists in clinical interactions with black and white patients/companions. *Proceedings of the Conference of the American Association for Cancer Research Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved*, Washington, DC.
- Epstein, R. A. (2005). Disparities and discrimination in health care coverage: A critique of the Institute of Medicine study. *Perspectives in Biology and Medicine, 48*(1 Suppl), S26–41.
- Epstein, R. M., & Street, R. L. J. (2007). *Patient-centered communication in cancer care: Promoting healing and reducing suffering*. Bethesda, MD: National Cancer Institute.

- Fleming, S. T., Pursley, H. G., Newman, B., Pavlov, D., & Chen, K. (2005). Comorbidity as a predictor of stage of illness for patients with breast cancer. *Medical Care*, *43*(2), 132–140. doi:10.1097/00005650-200502000-00006.
- Frohlich, K. L., Ross, N., & Richmond, C. (2006). Health disparities in Canada today: Some evidence and a theoretical framework. *Health Policy*, *79*, 132–143. doi:10.1016/j.healthpol.2005.12.010.
- Gallo, L. C., Espinosa de los Monteros, K., & Shivpuri, S. (2009). Socioeconomic status and health: What is the role of reserve capacity? *Current Directions in Psychological Science*, *18*(5), 269–274. doi:10.1111/j.1467-8721.2009.01650.x.
- Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61–89). Orlando, FL: Academic Press.
- Goldhirsch, A., & Gelber, R. D. (1994). Understanding adjuvant chemotherapy for breast cancer. *New England Journal of Medicine*, *330*(18), 1308–1309.
- Gordon, H. S., Street, R. L., Jr., Sharf, B. F., Kelly, P. A., & Soucek, J. (2006a). Racial differences in trust and lung cancer patients' perceptions of physician communication. *Journal of Clinical Oncology*, *24*(6), 904–909. doi:10.1200/JCO.2005.03.1955.
- Gordon, H. S., Street, R. L., Jr., Sharf, B. F., & Soucek, J. (2006b). Racial differences in doctors' information-giving and patients' participation. *Cancer*, *107*(6), 1313–1320. doi:10.1002/cncr.22122.
- Gordon, N. H. (2003). Socioeconomic factors and breast cancer in black and white Americans. *Cancer and Metastasis Reviews*, *22*(1), 55–65. doi:10.1023/A:1022212018158.
- Green, A. R., Carney, D. R., Pallin, D. J., Ngo, L. H., Raymond, K. L., Iezzoni, L. I., & Banaji, M. R. (2007). Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *Journal of General Internal Medicine*, *22*(9), 1231–1238. doi:10.1007/s11606-007-0258-5.
- Griggs, J. J., Culakova, E., Sorbero, M. E., Poniewierski, M. S., Wolff, D. A., Crawford, J., Dale, D. C., & Lyman, G. H. (2007a). Social and racial differences in selection of breast cancer adjuvant chemotherapy regimens. *Journal of Clinical Oncology*, *25*(18), 2522–2527. doi:10.1200/JCO.2006.10.2749.
- Griggs, J. J., Culakova, E., Sorbero, M. E., van Ryn, M., Poniewierski, M. S., Wolff, D. A., Dale, D. C., & Lyman, G. H. (2007b). Effect of patient socioeconomic status and body mass index on the quality of breast cancer adjuvant chemotherapy. *Journal of Clinical Oncology*, *25*(3), 277–284. doi:10.1200/JCO.2006.08.3063.
- Griggs, J. J., Sorbero, M. E., & Lyman, G. H. (2005). Undertreatment of obese women receiving breast cancer chemotherapy. *Archives of Internal Medicine*, *165*(11), 1267–1273. doi:10.1001/archinte.165.11.1267.
- Griggs, J. J., Sorbero, M. E., Stark, A. T., Heining, S. E., & Dick, A. W. (2003). Racial disparity in the dose and dose intensity of breast cancer adjuvant chemotherapy. *Breast Cancer Research and Treatment*, *81*(1), 21–31. doi:10.1023/A:1025481505537.
- Hack, T. F., Degner, L. F., & Parker, P. A. (2005). The communication goals and needs of cancer patients: A review. *Psycho-Oncology*, *14*(10), 831–847. doi:10.1002/pon.949.
- Hagiwara, N., Penner, L. A., Eggly, S., & Albrecht, T. L. (2011). Perceived discrimination, implicit bias, and adherence to physician recommendations. *The Science of Research on Discrimination and Health Conference*, Washington, DC.
- Halbert, C. H., Armstrong, K., Gandy, O. H., Jr., & Shaker, L. (2006). Racial differences in trust in health care providers. *Archives of Internal Medicine*, *166*(8), 896–901.
- Harlan, L., Brawley, O., Pommerehne, F., Wali, P., & Kramer, B. (1995). Geographic, age, and racial variation in the treatment of local/regional carcinoma of the prostate. *Journal of Clinical Oncology*, *13*(1), 93–100.
- Hesse, B. W., Arora, N. K., Burke-Bedford, B. E., & Finney, R. L. J. (2009). Information support for cancer survivors. *Cancer*, *112*, (11 Suppl), 2529–2540. doi:10.1002/cncr.23445.
- Hoffman, R. M., Gilliland, F. D., Eley, J. W., Harlan, L. C., Stephenson, R. A., Stanford, J. L., Albertson, P. C., Hamilton, A. S., Hunt, W. C., & Potosky, A. L. (2001). Racial and ethnic differences in advanced-stage prostate cancer: The Prostate Cancer Outcomes Study. *Journal of National Cancer Institute*, *93*(5), 388–395. doi:10.1093/jnci/93.5.388.

- Hussain, S. K., Altieri, A., Sundquist, J., & Hemminki, K. (2008). Influence of education level on breast cancer risk and survival in Sweden between 1990 and 2004. *International Journal of Cancer*, *122*(1), 165–169. doi:10.1002/ijc.23007.
- Jemal, A., Clegg, L. X., Ward, E., Ries, L. A., Jamison, P. M., Wingo, P. A., Howe, H. L., Anderson, R. N., & Edwards, B. K. (2004). Annual report to the nation on the status of cancer, 1975–2001, with a special feature regarding survival. *Cancer*, *101*(1), 3–27. doi:10.1002/cncr.20288.
- Johnson, R. L., Roter, D., Powe, N. R., & Cooper, L. A. (2004). Patient race/ethnicity and quality of patient-physician communication during medical visits. *American Journal of Public Health*, *94*(12), 2084–2090.
- Johnson, R. L., Saha, S., Arbelaez, J. J., Beach, M. C., & Cooper, L. A. (2004). Racial and ethnic differences in patient perceptions of bias and cultural competence in health care. *Journal of General Internal Medicine*, *19*, 101–110.
- Koerber, A., Gajendra, S., Fulford, R. L., BeGole, E., & Evans, C. A. (2004). An exploratory study of orthodontic resident communication by patient race and ethnicity. *Journal of Dental Education*, *68*(5), 553–562.
- Linehan, C., Walsh, P. N., van Schrojenstein Lantman-de Valk, H. M. J., Kerr, M. P., & Dawson, F. (2009). Are people with intellectual disabilities represented in European public health surveys? *Journal of Applied Research in Intellectual Disabilities*, *22*, 409–420. doi:10.1111/j.1468-3148.2009.00521.x.
- Lu-Yao, G. L., Albertsen, P. C., Moore, D. F., Shih, W., Lin, Y., DiPaola, R. S., Barry, M. J., Zietman, A., O'Leary, M., Walker-Corkery, E., & Yao, S. L. (2009). Outcomes of localized prostate cancer following conservative management. *Journal of the American Medical Association*, *302*(11), 1202–1209. doi:10.1001/jama.2009.1348.
- Malat, J., & Hamilton, M. A. (2006). Preference for same-race health care providers and perceptions of interpersonal discrimination in health care. *Journal of Health and Social Behavior*, *47*(2), 173–187. doi:10.1177/002214650604700206.
- Michalski, T. A., & Nattinger, A. B. (1997). The influence of black race and socioeconomic status on the use of breast-conserving surgery for Medicare beneficiaries. *Cancer*, *79*(2), 314–319. doi:10.1002/(SICI)1097-0142(19970115)79:23.0.CO;2-3.
- Mobaraki, A. E., & Söderfeldt, B. (2010). Gender inequality in Saudi Arabia and its role in public health. *Eastern Mediterranean Health Journal*, *16*, 113–118.
- Morrow, T., Siegel, M., Boone, S., Lawless, G., & Carter, W. (2002). Chemotherapy dose intensity determination as a quality of care measure for managed care organizations in the treatment of early-stage breast cancer. *American Journal of Medical Quality*, *17*(6), 218–224. doi:10.1177/106286060201700604.
- Naik, A. M., Joseph, K., Harris, M., Davis, C., Shapiro, R., & Hiotis, K. L. (2003). Indigent breast cancer patients among all racial and ethnic groups present with more advanced disease compared with nationally reported data. *American Journal of Surgery*, *186*(4), 400–403. doi:10.1016/S0002-9610(03)00282-4.
- National Center for Health Statistics. (2008). *Health United States 2008, with chartbook on trends in the health of Americans*. Hyattsville, MD: US Government Printing Office.
- National Comprehensive Cancer Network. (2008). *Clinical Trials*. (Retrieved October 15, 2009 from <http://www.nccn.org/professionals/physianguidelines.asp>).
- National Comprehensive Cancer Network. (2009). (Retrieved May 2, 2010 from [www.nccn.org](http://www.nccn.org)).
- Newman, L. A., Pollock, R. E., & Johnson-Thompson, M. C. (2003). Increasing the pool of academically oriented African-American medical and surgical oncologists. *Cancer*, *97*(1 Suppl), 329–334. doi:10.1002/cncr.11862.
- Obeidat, N. A., Pradel, F. G., Zuckerman, I. H., Trovato, J. A., Palumbo, F. B., DeLisle, S., & Mullins, C. D. (2010). Racial/ethnic and age disparities in chemotherapy selection for colorectal cancer. *American Journal of Managed Care*, *16*, 515–522.
- O'Malley, A. S., Sheppard, V. B., Schwartz, M., & Mandelblatt, J. (2004). The role of trust in use of preventive services among low-income African-American women. *Preventive Medicine*, *38*(6), 777–785. doi:10.1016/j.ypmed.2004.01.018.
- Oliver, M. N., Goodwin, M. A., Gotler, R. S., Gregory, P. M., & Stange, K. C. (2001). Time use in clinical encounters: Are African-American patients treated differently? *Journal of the National Medical Association*, *93*(10), 380–385.

- Pearson, A. R., West, T. V., Dovidio, J. F., Powers, S. R., Buck, R., & Henning, R. (2008). The fragility of intergroup relations: Divergent effects of delayed audiovisual feedback in intergroup and intragroup interaction. *Psychological Science, 19*(12), 1272–1279. doi:10.1111/j.1467-9280.2008.02236.x.
- Penner, L. A., Albrecht, T. L., Orom, H., Coleman, D. K., & Underwood, W., III. (2010a). Health and health care disparities. In J. F. Dovidio, M. Hewstone, P. Glick, & V. M. Esses (Eds.), *The Sage handbook of prejudice, stereotyping and discrimination* (pp. 472–490). New York: Sage.
- Penner, L. A., Dovidio, J. F., Edmondson, D., Dailey, R. K., Markova, T., Albrecht, T. L., & Gaertner, S. L. (2009). The experience of discrimination and Black-White health disparities in medical care. *Journal of Black Psychology, 35*(2), 180–203. doi:10.1177/0095798409333585.
- Penner, L. A., Dovidio, J. F., West, T. V., Gaertner, S., Albrecht, T., Dailey, R. K., & Markova, T. (2010b). Aversive racism and medical interactions with black patients: A field study. *Journal of Experimental Social Psychology, 46*, 436–410. doi:10.1016/j.jesp.2009.11.004.
- Penner, L. A., Eggly, S., Harper, F. W. K., Albrecht, T. L., & Ruckdeschel, J. C. (2007). Patient attributes and information provided about clinical trials. *Poster presented at the American Association of Cancer Researchers Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved*, Atlanta, GA.
- Petrelli, J. M., Calle, E. E., Rodriguez, C., & Thun, M. J. (2002). Body mass index, height, and postmenopausal breast cancer mortality in a prospective cohort of US women. *Cancer Causes Control, 13*(4), 325–332.
- Ponce, N. A., Babey, S. H., Etzioni, D., Spencer, B. A., Brown, E. R., & Chawla, N. (2004). *Cancer screening in California: Findings from the 2001 California Health Interview Survey*. Los Angeles: UCLA Center for Health Policy Research.
- Richeson, J. A., & Shelton, J. N. (2005). Brief report: Thin slices of racial bias. *Journal of Nonverbal Behavior, 29*(1), 75–86. doi:10.1007/s10919-004-0890-2.
- Roa, B. B., Boyd, A. A., Volcik, K., & Richards, C. S. (1996). Ashkenazi Jewish population frequencies for common mutations in BRCA1 and BRCA2. *Nature Genetics, 14*(2), 185–187. doi:10.1038/ng1096-185.
- Rostila, M. (2010). Birds of a feather flock together—and fall ill? Migrant homophily and health in Sweden. *Sociology of Health & Illness, 32*, 382–399. doi:10.1111/j.1467-9566.2009.01196.x.
- Roter, D. L. (1984). Patient question asking in physician-patient interaction. *Health Psychology, 3*(5), 395–409. doi:10.1037/0278-6133.3.5.395.
- Rutten, L. J., Arora, N. K., Bakos, A. D., Aziz, N., & Rowland, J. (2005). Information needs and sources of information among cancer patients: A systematic review of research (1980–2003). *Patient Education and Counseling, 57*, 250–261.
- Salami, M. A., Etukakpan, B., & Olapade-Olaopa, O. (2007). Update on prostate cancer in black men. *Journal of Men's Health & Gender, 4*(4), 456–463.
- Sanda, M. G., Dunn, R. L., Michalski, J., Sandler, H. M., Northouse, L., Hembroff, L., Lin, X., Greenfield, T. K., Litwin, M. S., Saigal, C. S., Mahadevan, A., Klein, E., Kibel, A., Pisters, L. L., Kuban, D., Kaplan, I., Wood, D., Ciezki, J., Shah, N., & Wei, J. T. (2008). Quality of life and satisfaction with outcome among prostate-cancer survivors. *New England Journal of Medicine, 358*(12), 1250–1261. doi:10.1056/NEJMoa074311.
- Schapira, M. M., McAuliffe, T. L., & Nattinger, A. B. (1995). Treatment of localized prostate cancer in African-American compared with Caucasian men. Less use of aggressive therapy for comparable disease. *Medical Care, 33*(11), 1079–1088.
- Schulman, K. A., Berlin, J. A., Harless, W., Kerner, J. F., Sistrunk, S., Gersh, B. J., Dubé, R., Taleghani, C. K., Burke, J. E., Williams, S., Eisenberg, J. M., Ayers, W., & Escarce, J. J. (1999). The effect of race and sex on physicians' recommendations for cardiac catheterization. *New England Journal of Medicine, 340*(8), 618–626. doi:10.1056/NEJM199902253400806.
- Schwartz, K. L., Powell, I. J., Underwood, W., III, George, J., Yee, C., & Banerjee, M. (2009). Interplay of race, socioeconomic status and treatment on survival of prostate cancer patients. *Urology, 74*(6), 1296–1302. doi:10.1016/j.urol.2009.02.058.
- Shavers, V. L., Brown, M., Klabunde, C. N., Potosky, A. L., Davis, W., Moul, J., & Fahey, A. (2004a). Race/ethnicity and the intensity of medical monitoring under 'watchful waiting' for prostate cancer. *Medical Care, 42*(3), 239–250.

- Shavers, V. L., Brown, M. L., Potosky, A. L., Klabunde, C. N., Davis, W. W., Moul, J. W., et al. (2004b). Race/ethnicity and the receipt of watchful waiting for the initial management of prostate cancer. *Journal of General Internal Medicine*, *19*(2), 146–155. doi:10.1111/j.1525-1497.2004.30209.x.
- Siegel, S., Ward, E., Brawley, O., & Jemal, A. (2011). Cancer statistics, 2011. *CA: A Cancer Journal for Clinicians*, *61*(4), 212–236. doi:10.3322/caac.20121.
- Siminoff, L. A., Graham, G. C., & Gordon, N. H. (2006). Cancer communication patterns and the influence of patient characteristics: Disparities in information-giving and affective behaviors. *Patient Education and Counseling*, *62*(3), 355–360. doi:10.1016/j.pec.2006.06.011.
- Smedley, B. D., Stith, A. Y., & Nelson, A. R. (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academies Press.
- Smith-Bindman, R., Miglioretti, D. L., Lurie, N., Abraham, L., Barbash, R. B., Strzelczyk, J., Dignan, M., Barlow, W. E., Beasley, C. M., & Kerlikowske, K. (2006). Does utilization of screening mammography explain racial and ethnic differences in breast cancer. *Annals of Internal Medicine*, *144*(8), 541–553.
- Street, R. L., & Gordon, H. S. (2008). Companion participation in cancer consultations. *Psychosomatics*, *17*(3), 244–251. doi:10.1002/pon.1225.
- Street, R. L., Jr., O'Malley, K. J., Cooper, L. A., & Haidet, P. (2008). Understanding concordance in patient-physician relationships: Personal and ethnic dimensions of shared identity. *Annals of Family Medicine*, *6*(3), 198–205. doi:10.1370/afm.821.
- Thomson, C. S., Hole, D. J., Twelves, C. J., Brewster, D. H., & Black, R. J. (2001). Prognostic factors in women with breast cancer: Distribution by socioeconomic status and effect on differences in survival. *Journal of Epidemiology and Community Health*, *55*(5), 308–315. doi:10.1136/jech.55.5.308.
- Thompson, H. S., Valdimarsdottir, H. B., Winkel, G., Jandorf, L., & Redd, W. (2004). The Group-Based Medical Mistrust Scale: Psychometric properties and association with breast cancer screening. *Preventive Medicine*, *38*(2), 209–218. doi:10.1016/j.ypmed.2003.09.041.
- Trivedi, A. N., Zaslavsky, A. M., Schneider, E. C., & Ayanian, J. Z. (2006). Relationship between quality of care and racial disparities in Medicare health plans. *Journal of the American Medical Association*, *296*(16), 1998–2004. doi:10.1001/jama.296.16.1998.
- Underwood, W., III, Jackson, J., Wei, J. T., Dunn, R., Baker, E., Demonner, S., & Wood, D.P. (2005). Racial treatment trends in localized/regional prostate carcinoma: 1992–1999. *Cancer*, *103*(3), 538–545. doi:10.1002/cncr.20796.
- Underwood, W., III, Wei, J., Rubin, M. A., Montie, J. E., Resh, J., & Sanda, M. G. (2004a). Postprostatectomy cancer-free survival of African Americans is similar to non-African Americans after adjustment for baseline cancer severity. *Urologic Oncology*, *22*(1), 20–24. doi:10.1016/S1078-1439(03)00119-4.
- Underwood, W., De Monner, S., Ubel, P., Fagerlin, A., Sanda, M. G., & Wei, J. T. (2004b). Racial/ethnic disparities in the treatment of localized/regional prostate cancer. *Journal of Urology*, *171*(4), 1504–1507.
- van Ryn, M. (2002). Research on the provider contribution to race/ethnicity disparities in medical care. *Medical Care*, *40*(1 Suppl), 140–151.
- van Ryn, M., Burgess, D., Malat, J., & Griffin, J. (2006). Physicians' perceptions of patients' social and behavioral characteristics and race disparities in treatment recommendations for men with coronary artery disease. *American Journal of Public Health*, *96*(2), 351–357. doi:10.2105/AJPH.2004.041806.
- van Ryn, M., & Burke, J. (2000). The effect of patient race and socio-economic status on physicians' perceptions of patients. *Social Science and Medicine*, *50*(6), 813–828. doi:10.1016/S0277-9536(99)00338-X.
- van Ryn, M., & Saha, S. (2011). Exploring unconscious bias in disparities research and medical education. *Journal of the American Medical Association*, *306*, 995–996. doi:10.1001/jama.2011.1275.
- Wong, M. D., Ettner, S. L., Boscardin, W. J., & Shapiro, M. F. (2009). The contribution of cancer incidence, stage at diagnosis and survival to racial differences in years of life expectancy. *Journal of General Internal Medicine*, *24*(4), 475–481. doi:10.1007/s11606-009-0912-1.

- Wong, Y. N., Mitra, N., Hudes, G., Localio, R., Schwartz, J. S., Wan, F., Montagnet, C., & Armstrong, K. (2006). Survival associated with treatment vs observation of localized prostate cancer in elderly men. *Journal of the American Medical Association*, 296(22), 2683–2693. doi:10.1001/jama.296.22.2683.
- Yu, X. Q. (2009). Socioeconomic disparities in breast cancer survival: Relation to stage at diagnosis, treatment and race. *Biomed Central Cancer*, 9, 364. doi:10.1186/1471-2407-9-364.
- Zeliadt, S. B., Potosky A. L., Etzioni, R., Ramsey, S. D., & Penson, D. F. (2004). Racial disparity in primary and adjuvant treatment for nonmetastatic prostate cancer: SEER-Medicare trends 1991 to 1999. *Urology*, 64, 1171–1176.
- Zeliadt, S. B., Ramsey, S. D., Penson, D. F., Hall, I. J., Ekwueme, D. U., Stroud, L., et al. (2006). Why do men choose one treatment over another? A review of patient decision making for localized prostate cancer. *Cancer*, 106(9), 1865–1874. doi:10.1002/cncr.21822.

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