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# Racial/Ethnic Disparities in the Assessment and Treatment of Pain

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## *Psychosocial Perspectives*

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*Racial/ethnic disparities not only are prevalent throughout the U.S. health care system but also have proved refractory to change. Such disparities are evident and similarly persistent in the treatment of patients with chronic pain conditions, exacting high personal and societal costs. While psychosocial factors contribute significantly to this intractable problem, an integrated examination of the literature is lacking. This article provides an overview of psychosocial factors that contribute to disparities in the treatment of chronic pain patients and in their adjustment to pain. It focuses initially on aspects of pain assessment that can occasion disparate care. Because pain is a subjective phenomenon that often defies objective medical assessment, it is particularly susceptible to social psychological influences, such as stereotypes. We pay particular attention to negative racial/ethnic stereotypes as well as to the circumstances that are likely to trigger stereotype-driven judgments. Subsequent sections review psychosocial factors that can influence a patient's experience of pain, those that can influence the patient-provider interaction, and those that operate in the public health environment. After each section, we suggest actions that could address identified issues related to clinical care, research, and policy. Policy recommendations generally are linked to provisions of the Affordable Care Act. We conclude with a discussion of the role that psychology should play in future efforts to address the persistent problem of racial/ethnic disparities in pain care.*

**Keywords:** health care disparities, race/ethnicity, chronic pain, social judgment, racial bias

**S**everal decades of research have documented widespread disparities in the delivery of health care services across a broad range of medical conditions (Institute of Medicine, 2003). Subsequent reports from the Agency for Healthcare Research and Quality (2013) have documented continued disparities across the health care landscape. Given the cost of these inequities to the U.S. economy (Institute of Medicine, 2011), it is no surprise that the Patient Protection and Affordable Care Act (2010; ACA) specifically targets health care disparities. It also is no surprise that the disparities described above also apply to people with chronic, nonmalignant pain—pain that has persisted for at least three months and is usually associated with injuries and/or degenerative conditions (e.g., osteoar-

thritis, diabetes). While chronic pain patients have been identified as generally vulnerable to undertreatment, racial/ethnic minorities represent a particularly vulnerable subgroup.

This article focuses on psychosocial factors that contribute to racial/ethnic disparities in the treatment of persons with chronic pain. We examine race/ethnicity, rather than other sociodemographic features, for several reasons: (a) Race/ethnicity, especially Black race, is heavily studied (although there is increasing attention to Hispanic ethnicity); (b) racial/ethnic disparities have proved refractory to change, reflecting multiple factors—patient, provider, and systemic/cultural—that contribute directly and interactively; and (c) recent legislation (the ACA) has provisions that aim to address racial/ethnic disparities in health care. Finally, we focus on chronic pain for several reasons (Institute of Medicine, 2011): (a) It affects a large proportion of the U.S. population; (b) the cost of mismanagement at both the patient and societal levels is large; and (c) the treatment of chronic pain presents challenges to health care providers, and psychosocial factors contribute significantly to that challenge. All of these features make the topic appropriate for a psychology readership.

We first describe issues associated with the assessment of chronic pain conditions that render patients vulnerable to mismanagement. We then consider factors that may influence treatment, including those associated with the patient, the patient-provider interaction, and the public health environment (see Figure 1). The patient level includes core elements of the experience of pain, including nociception, beliefs, and coping. The patient-provider interaction involves factors that may occasion disparities from both the patient and the provider. The environmental level includes not only the physical environment in which

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a patient lives but also the economic, medical, and cultural context within which treatment is delivered. Finally, we consider future directions related to policy, clinical care, and research. As noted above, the policy discussion includes proposed changes in health care policy associated with the ACA, especially changes that might address issues of particular concern to the pain community.

## The Problem of Pain Assessment

The assessment of chronic pain is complicated primarily because pain is an inherently subjective experience that resists direct observation. Although physicians generally prefer objective diagnostic test results to support clinical decisions, such data are often lacking for pain (Rhodes, McPhillips-Tangum, Markham, & Klenk, 1999). While advances in neuroimaging technology show objective evidence of neural activity associated with the experience of pain (e.g., Apkarian et al., 2004; Davis, Racine, & Collett, 2012), such technology cannot realistically be applied at the clinic level. Further, the objective medical evidence usually adduced to assess potential causes of pain frequently fails to correlate with reported levels of pain intensity, as patients can report high levels of chronic pain absent objective diagnostic evidence (Beattie & Meyers, 1998) and can report no pain despite observable medical findings (Rhodes et al., 1999).

Hence, the primary means by which to assess pain remains the patient self-report, even though such reports represent an imperfect solution (Stinson, Kavanagh, Yamade, Gill, & Stevens, 2006). First, pain reports are unidimensional attempts to assess a multidimensional experience. While some advocate the use of more linguistic approaches (Biro, 2010), such approaches lack the measurement properties of a unidimensional approach. Second,

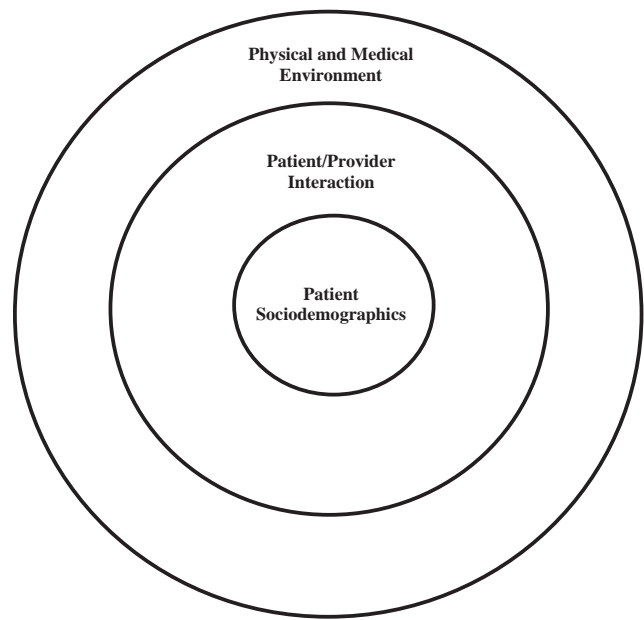
self-report measures can be difficult to understand for patients with limited English proficiency (invariably minorities), increasing their vulnerability to inadequate care (Nguyen, Ugarte, Fuller, Haas, & Portenoy, 2005). In fact, rating scales can be challenging for other selected populations, such as children and people with cognitive impairments (Buffum, Hutt, Chang, Craine, & Snow, 2007). Further, rating scales do not resolve uncertainties inherent in self-reports, particularly whether a patient is magnifying symptoms (Merskey & Teasell, 2000). Finally, the use of rating scales does not reduce inconsistencies inherent in provider decision making (Chibnall, Dabney, & Tait, 2000).

Given all of the above, it is no surprise that providers frequently discount pain when reported levels are high (Chibnall, Tait, & Ross, 1997). As shown in Figure 2, pain reported to be of high severity can occasion uncertainty regarding the validity of the self-report (Merskey & Teasell, 2000), possibly because severe pain presents implicit demands on a provider (Tait, 2013) and possibly because such reports violate social norms favoring stoicism (De Ruddere, Goubert, Stevens, Williams, & Crombez, 2013). In the face of uncertainty, latent/implicit stereotypes may be activated (Sabin & Greenwald, 2012), advantaging patients who fit positive stereotypes (e.g., pro-White), disadvantaging patients who do not (e.g., Blacks), and potentially impacting the latter group adversely (Dovidio & Fiske, 2012; Moskowitz, Stone, & Childs, 2012).

## Stereotypes

Considerable evidence demonstrates that judgments about pain are influenced by features of the patient (e.g., race/

**Figure 1**  
*Factors Contributing to Disparities in Pain Care*



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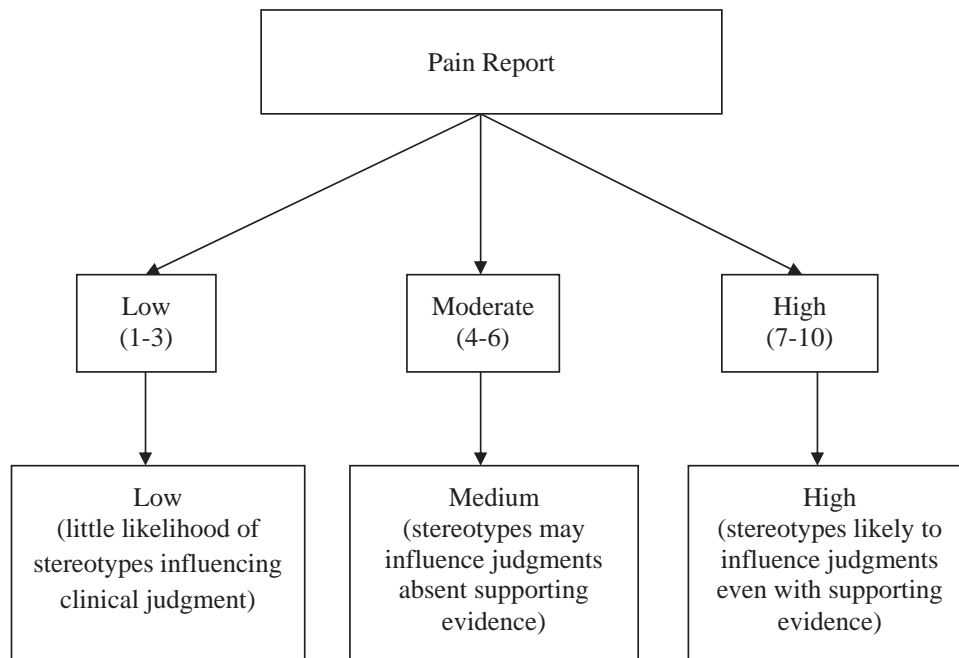
ethnicity), the situation (e.g., medical evidence), and the provider (e.g., experience; Tait, Chibnall, & Kalauokalani, 2009). As noted above, this may be a function of uncertainties inherent in pain assessment that introduce considerable ambiguity into provider judgments of pain and treat-

ment decisions (Chibnall et al., 2000). Like a projective test, providers can project onto patients their attitudes, beliefs, and opinions, making clinical judgments ripe for the influence of stereotyping.

Stereotypes represent a shorthand way of characterizing a group of people that shares a given attribute, such as race or ethnicity (Fiske & Taylor, 1991). Negative stereotypes have been documented for racial/ethnic minorities that experience pain (Burgess et al., 2008; Dovidio & Fiske, 2012). For example, Blacks and Hispanics are seen as more likely to require scrutiny for potential drug abuse (Becker et al., 2011) despite evidence to the contrary (Becker, Sullivan, Tetrault, Desai, & Fiellin, 2008). Further, and consistent with the focus of this article, primary care providers are more likely to underestimate pain intensity in Blacks than in other sociodemographic groups (Stanton et al., 2007).

There is increasing consensus that two sets of cognitive processes contribute to clinical judgment (Burgess, van Ryn, Crowley-Matoka, & Malat, 2006): (a) evidence-based processes that are situation-specific, conscious, logical, and effortful, and (b) intuitive processes that are less situation-bound, almost automatic, affect-laden, and less effortful. Stereotypes are good examples of the latter—an intuitive process of which people often are unaware but that can bias their judgments (Hirsh, Jensen, & Robinson, 2010; Macrae & Bodenhausen, 2001). Such biases are difficult to study: Explicit biases (e.g., pro-White beliefs and attitudes that are openly acknowledged) are commonly disavowed, even

**Figure 2**  
*Pain Severity: Stereotype Activation Potential*



as implicit biases (generally reflecting culturally derived associations that are less amenable to conscious control) continue to operate (Dovidio & Fiske, 2012). This pattern was demonstrated in a recent study of implicit and explicit biases toward Latinos and Blacks in a large sample of community physicians (Blair et al., 2013): Although the physicians reported no bias toward either racial/ethnic group, implicit biases (measured with the Implicit Association Test [IAT]; Greenwald, Nosek, & Banaji, 2003) were evident for both. Another challenge involves inductions that explicitly vary race/ethnicity through written vignettes—these may elicit well-considered, conscious decisions rather than intuitive biases (van Ryn & Saha, 2011). A recent study represents a striking example of the latter effect (Haider et al., 2011): Although medical students were found to demonstrate a significant pro-White, pro-upper class leaning on the IAT, their responses to a set of clinical assessment vignettes (one of which involved pain assessment) reflected little to no evidence of bias. Ideally, methodologies used in studies of stereotypes should include assessment of both explicit and implicit bias as well as the subtle, nuanced actions (e.g., communication style) that can reflect bias (Dovidio, Kawakami, & Gaertner, 2002).

Interestingly, studies of pain (where treatment guidelines are not well defined nor “correct” answers obvious) may represent an area where more obvious indicators of bias are evident. In one study, subjects viewed a series of pained facial expressions, estimated the level of pain that the patient experienced (in pain estimation, there is no readily “correct” answer), and then rated the influence of elements of the picture on their judgments—race was one of those elements (Hirsh et al., 2010). While respondents denied any influence of race, analyses showed that race did influence judgments (pain ratings were higher for minority patients). Several other studies that used videotapes of patients in pain also found pro-White biases in the form of more aggressive treatment recommended for Whites (Drwecki, Moore, Ward, & Prkachin, 2011; Kaseweter, Drwecki, & Prkachin, 2012).

## The Patient–Provider Interaction

The patient–provider partnership is of great importance in conditions such as chronic pain, where the need for collaborative decision making is high (Hadjistavropoulos et al., 2011). High levels of patient–provider communication have multiple benefits, which include increased patient engagement in self-management and increased feedback to providers regarding treatment effectiveness (Dorflinger, Kerns, & Auerbach, 2013). Obviously, one factor that can impact communication adversely involves language skills, especially limited English proficiency (LEP), an issue obviously linked to minority status. While only limited research has examined LEP and pain care (Nguyen et al., 2005), there is abundant evidence that LEP is in general a barrier to adequate health care (e.g., Bradshaw, Tomany-Korman, & Flores, 2007; Ponce, Hays, & Cunningham, 2006). Further, despite provisions in federal statutes that

provide protections for LEP patients, language accommodation programs are neither widely available nor comprehensive (Phokeo & Hyman, 2007).

While language proficiency is an obvious factor that can adversely affect communication, nonspecific factors associated with race/ethnicity are also important. For example, minority patients have been found to be less active in their communications when the encounter is race-discordant (Cooper-Patrick et al., 1999), more active with race-concordant providers (Saha, Komaromy, Koepsell, & Bindman, 1999), and likely to report more distressing pain to a race-concordant observer (Hsieh, Tripp, & Li-Jun, 2011). Although numerous factors that involve both the patient and the provider may contribute to these differences, recent research suggests that provider bias may play a role. Several studies of primary care physicians examined clinician implicit race bias and its associations with provider communication and patient satisfaction. Among other results, the data showed that high racial bias was associated with less patient-centered dialogue toward Blacks and with Black patient perceptions of providers as less respectful (Cooper et al., 2012). Another study identified a group of physicians who denied explicit bias but demonstrated high levels of implicit bias (Penner et al., 2010): Patients of these physicians reported lower levels of satisfaction, closeness, and warmth than other physician types, a dynamic that would discourage minority participation in clinical decision making.

Empathy is another area with potential implications for pain disparities. A large body of research has emerged involving neurophysiologic activity in the anterior insula (AI) and the anterior cingulate cortex (ACC)—areas typically associated with the personal experience of pain—triggered by the observation of others undergoing painful stimulation. While a review of the literature is beyond the scope of this article (for a recent review, see Bernhardt & Singer, 2012), the research generally shows that similar regions of the brain are activated in both felt pain and observed pain (the latter reflecting empathy for pain). Several studies have targeted empathy and racial bias. In one, Asian and White subjects viewing videotapes of individuals undergoing a painful stimulus demonstrated increased ACC activity but only when viewing models of the same race (Xu, Zuo, Wang, & Han, 2009). Another neurophysiologic approach has examined sensorimotor inhibition, rather than ACC/AI activity: Muscle evoked potential (MEP) was measured in Black and White subjects while they viewed the hands of same- and other-race models undergoing painful stimulation of the dorsal interosseus muscle (Avenanti, Sirigu, & Aglioti, 2010). MEP was differentially affected by the race of the model’s hand: Greater muscle inhibition was found for subjects viewing same-race models than for subjects viewing other-race models. These and other studies suggest that the neural substrate for empathy is heightened for members of the same race.

There also is support for empathy-race bias on a more behavioral level. Several recent studies with undergraduates used explicit measures of empathy for Black and

White patients who were videotaped during a painful procedure (Drwecki et al., 2011; Kaseweter, Drwecki, & Prkachin, 2012). Results in both studies showed a pro-White bias for empathy and for more aggressive treatment; the empathy bias partially mediated the treatment bias. Interestingly, a similar pattern did not emerge for nurses who participated in the same study protocol, largely because nurse empathy was high for both racial groups.

While the above studies suggest that empathy (and treatment) levels may be enhanced in race-concordant interactions, it is important to recognize practical considerations associated with minority status that can also impact treatment. For example, international medical graduates may receive little training in the management of acute or chronic pain (Meghani et al., 2012). Consequently, they may have little experience with common analgesic regimens (Abbas, Muhammad, Mubeen, & Abbas, 2004), a distinct disadvantage that may outweigh other racial/ethnic considerations.

Might interventions improve patient-provider communication and treatment effectiveness? Several studies suggest that this is possible. In a patient-focused study, minority and nonminority cancer patients received pain communication training (Kalaoukalani, Franks, Oliver, Meyers, & Kravitz, 2007). While posttraining levels of pain decreased significantly from pretraining levels for all patients, the greatest decreases were found for minority patients. In a more provider-focused approach, students who were trained in perspective taking, an important component of empathy, demonstrated less of a pro-White bias in empathy and in treatment recommendations than did students who did not receive such training (Drwecki et al., 2011). Although the above results are somewhat promising, the former study involved a reasonably intensive intervention that may not be practical in many clinic settings, and the latter study involved a laboratory setting that was far removed from the pressures of a typical clinical practice. Hence, there are questions about the application of each study's findings to typical clinical settings.

### **Suggested Directions**

The empathy training described above focused trainees' attention on the likely impact of pain on the patients under study. Such attention often is lacking among primary care providers when evaluating patients with chronic pain (Turner, LeResche, Von Korff, & Ehrlich, 1998). The absence of this information may contribute to the effects of implicit bias in clinical decisions. If so, increased training in pain management strategies during health care education could improve attention to pain-related dysfunction, especially in light of the inadequate training provided in most curricula (Mezei & Murinson, 2011). Indeed, it is instructive to note that the National Institutes of Health have initiated a program to establish Centers of Excellence in Pain Education (CoEPEs) to establish educational materials for the range of health care providers. The CoEPEs are to develop case-based curricula that cover the challenges that chronic pain patients present to doctors, nurses, dentists, and other providers (Thomas et al., 2012).

The data in this section also highlight the need to enhance cultural competency among health professionals. Multiple ACA provisions relevant to such training could reduce inequities in pain care: training primary care physicians in cultural competence (Patient Protection and Affordable Care Act, 2010, § 5301), developing and evaluating models of cultural competence curricula (§ 5307), and supporting collaborative research on topics that include cultural competence (§ 5307). Of course, ACA provisions that would incentivize payments to health care providers for actions undertaken to reduce health care disparities also could increase provider sensitivity to the issue.

### **Patient Factors**

Systematic physiologic and sociocultural differences may distinguish patients from various racial/ethnic groups in ways that may impact pain assessment/treatment, through differences in nociception, pain tolerance, and approaches to coping and treatment. In the following sections we briefly address experimental and clinical research findings on these topics. While questions may be raised regarding the clinical application of the experimental literature (involving acute pain exposures with healthy subjects), such dispositions/characteristics are relevant, as they can impact the delivery of care if a clinical pain condition were to develop.

#### **Pain Perception**

**Experimental studies.** There is longstanding interest in racial/ethnic differences in pain sensitivity, much of it showing that Blacks demonstrate lower pain thresholds and tolerances than Whites (see Zatzick & Dimsdale, 1990, for a review of the early work). Recent experimental research has attempted to "unpack" the general pattern described above. For example, there is evidence that differences in pain perception may be mediated by higher levels of negative affect among Blacks relative to Whites (e.g., Campbell et al., 2008). Alternatively, Blacks may approach pain inductions with higher levels of vigilance, and vigilance may mediate perceptions of pain severity, threshold, or tolerance (Campbell, Edwards, & Fillingim, 2005; Campbell et al., 2008).

While this (and other) experimental literature is suggestive, it is important to recognize that data derived from experimental settings may not predict responses to clinical pain (Edwards, Doleys, Fillingim, & Lowery, 2001). It also is noteworthy that experimental pain inductions occur in a social setting (experimenter-subject), and most studies have not controlled for racial/ethnic concordance. When a recent study did so, it showed that subjects in ethnically concordant pairs demonstrated higher pain behaviors than did subjects in nonconcordant pairs (Hsieh et al., 2011).

The above research suggests that differences do exist in perceptions of pain between Black and White subjects. The mechanisms underlying these differences, however, remain elusive, as differences in vigilance may influence descending inhibitory controls or, instead, work at supraspinal levels (e.g., interpreting nociceptive signals). It is important to recognize, however, that the reported differ-

ences are small and may have little implication for an individual patient, even less if the differences are affected by individual differences in affect or vigilance or by patient-provider racial concordance.

**Clinical studies.** While some clinical studies show no racial/ethnic differences (e.g., Jordan, Lumley, & Leisen, 1998), the preponderance of evidence suggests that Blacks report higher levels of clinical pain across a range of painful conditions (Green et al., 2003). A similar pattern obtained in studies of patients seeking treatment for chronic noncancer pain (e.g., McCracken, Matthews, Tang, & Cuba, 2001). Such differences have implications that could explain racial/ethnic differences in treatment response: Patients presenting with higher levels of pain/disability also are more likely to exit treatment reporting higher levels of pain/disability. As with the experimental literature, however, methodological limitations temper these results: the restricted nature of the samples (e.g., most include patients from a single clinic), a lack of control over the severity of the pain condition, and a lack of control over preexisting treatments. Relative to the latter, patients who have felt discounted in previous treatments may augment symptom reports in order to reduce the likelihood of being discounted again (Marbach, Lennon, Link, & Dohrenwend, 1990). All of these complications make it difficult to interpret the association between race/ethnicity and self-reported pain and/or disability in a clinical sample.

### **Coping and Pain Adjustment**

Blacks appear to demonstrate higher levels of posttreatment disability than Caucasians for conditions that include chronic low back pain (Chibnall, Tait, Andresen, & Hadler, 2005), osteoarthritis (Allen et al., 2010), and other chronic pain conditions (Green et al., 2003). In addition to increased disability, Blacks also demonstrate more affective distress in response to chronic pain, with the distress contributing to levels of pain-related disability (Allen et al., 2010).

Other psychological factors also might impact pain-related disability. For example, Blacks are more likely than Whites to use passive coping strategies such as prayer in coping with pain (Jordan et al., 1998), while Whites are more likely to use active coping self-statements and to perceive themselves as having higher levels of pain control (Clark, Anderson, Clark, & Williams, 1999). Similarly, Blacks may be more likely to catastrophize than other ethnic groups (Fabian, McGuire, Goodin, & Edwards, 2011); pain catastrophizing contributes to poorer pain adjustment (Sullivan, Rodgers, & Kirsch, 2001).

Higher levels of education appear to protect against pain-related disability (Roth & Geisser, 2002) through several likely mechanisms. One involves the association between higher levels of education and higher levels of health literacy—health literacy is associated with higher levels of function in patients with rheumatologic diagnoses (Swearingen et al., 2010). Similarly, low back pain patients with higher levels of education demonstrate lower levels of fear-avoidance beliefs and pain-related disability than do patients with lower levels of education (Valencia, Robin-

son, & George, 2011). Finally, higher levels of education are associated with higher levels of income. Income clearly is linked with the likelihood of experiencing a recent pain episode (Institute of Medicine, 2011, p. 74): Relative to people with incomes at 400% of poverty level, people with incomes below poverty level are 1.76 times more likely to report severe headache, 1.48 times more likely to report low back pain, and 1.59 times more likely to report neck pain.

Last, there is evidence that Blacks and other minorities lack trust in the medical system (LaVeist, Nickerson, & Bowie, 2000). Relative to non-Hispanic Whites, Blacks are almost three times—and Hispanics over two times—more likely to view racism as a major health care problem (Lillie-Blanton, Brodie, Rowland, Altman, & McIntosh, 2000). Given these levels of distrust, it is no surprise that Blacks feel high levels of stereotype threat in medical encounters (Burgess et al., 2009) and have low expectations of benefit from treatment (Ibrahim, Siminoff, Burant, & Kwok, 2002). These expectations likely contribute to persistently low rates of surgery for knee and joint replacement among minorities (Centers for Disease Control and Prevention, 2009).

### **Suggested Directions**

In light of the evidence that Blacks may perceive and experience pain differently from Whites, there is a clear need to include substantial numbers of Blacks and other minorities in clinical research in order to evaluate their response to interventions. Unfortunately, recruitment is a challenge in a minority community characterized by mistrust of the medical establishment. In order to meet recruitment challenges, it may be necessary to partner more effectively with minority community organizations and to oversample minority groups. Partnerships, of course, will be more successful if there are mutually agreeable mechanisms by which the research community “gives back” to minority communities.

The education and health literacy deficits described above call for a comprehensive educational campaign. There is evidence that such campaigns can be effective. For example, a broadly televised educational campaign (describing symptoms commonly associated with low back pain and their usual course) that was undertaken in Australia occasioned a drop in disability claims and work-related absences (Buchbinder, Jolley, & Wyatt, 2001). Unfortunately, typical media exposures to health messages have not proved particularly useful in addressing minority health disparities (e.g., in cancer diagnosis and treatment). Clearly, research is needed on ways to target health messages more effectively to minorities (Kreuter & Bernhardt, 2009). Further, some provisions of the ACA might address health literacy issues: The ACA mandates population surveys of the Medicaid database related to race, ethnicity, and primary language. Such a picture of the current status of race/ethnicity and literacy in the United States could guide actions (e.g., through the Patient-Centered Outcomes Research Institute; Patient Protection and Affordable Care Act, 2010, § 6301) to address these issues.

Of course, regardless of the success of targeted surveys and educational campaigns, minority pain patients still must deal with a chronic health condition that challenges their coping resources and a health care system that they distrust. Patient navigation, developed to improve treatment outcomes for poor Black women with cancer, represents an emerging model that merits consideration for minorities with chronic pain. It addresses many of the barriers cited above: "Navigators work to address financial and insurance issues, coordinate appointments and care among multiple cancer providers, address language and health literacy needs and train patients to advocate for themselves in the health care system" (Freund, 2011, p. 110). Given the evident success of such models for cancer patients (Freeman, 2012), research on their use for minorities with chronic pain seems warranted.

## Pain and Public Health

Recent estimates suggest that chronic pain affects over 116 million U.S. citizens with annual costs, considering both medical treatment and lost productivity, approximating \$600 billion (Institute of Medicine, 2011), making chronic pain a bona fide public health problem. In this section we examine public health issues as they relate to racial/ethnic disparities and, more particularly, to impediments in the delivery of equitable care. We focus not only on impediments associated with race/ethnicity but also on those related to socioeconomic status (SES).

The literature identifies several race-related impediments to care. One that we already have noted involves minority distrust of the medical professions. When coupled with lowered expectations of treatment benefit, distrust can cause reluctance to seek care. A study of knee replacement surgery clearly illustrates such reluctance (Ibrahim et al., 2002). Minority and nonminority patients with similar, high levels of structural pathology and longstanding pain underwent presurgical evaluation for knee replacement surgery, during which their expectations regarding surgical success also were assessed. Patients then decided whether they wanted to pursue surgery, and Blacks decided to undergo treatment significantly less often than Whites. As lower presurgery expectations among Blacks explained those differences, the expectations clearly affected the care that they elected to pursue.

Another social variable relevant to public health involves racism, the "beliefs, attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation" (Clark et al., 1999; p. 805). Two mediating mechanisms have been proposed: (a) Racial/ethnic groups who are exposed to racism may experience negative biopsychosocial sequelae (Anderson, McNeilly, & Myers, 1991), and (b) the incremental, racism-related demands on minorities may overwhelm their coping repertoires. Relative to the latter, there is substantial consensus in the public health literature (Smedley, 2012) and recent supporting evidence specific to chronic pain: Black patients seen for pain treatment have reported stresses related to racism that added to

the disease burden that they described (Burgess et al., 2009).

Patient beliefs and race-related stresses, however, do not represent the only impediments to care. The lack of available insurance coverage is another significant impediment (Mayberry, Mili, & Ofili, 2000). Other impediments can be traced to variability in physician behavior, resulting in undertreatment and slow referrals for specialty care. These impediments have been described in several recent studies. A survey-based study showed that many minority patients believed they should have been referred much earlier to a tertiary pain center (Green & Hart-Johnson, 2010). Several other studies, based on retrospective reviews of a large sample of Black and White Veterans Affairs patients, also point to physician variability: One showed that Blacks were less likely to undergo screening for pain at medical visits (Burgess et al., 2013), while the other showed that Blacks receiving opioids for noncancer pain were subjected to more urine drug tests, more referrals for substance abuse assessment, and fewer referrals to a pain specialist (Hausmann, Gao, Lee, & Kwok, 2013).

## Socioeconomic Status

As noted previously, minorities are represented disproportionately in lower SES strata (Mayberry et al., 2000), and people at lower SES strata are at increased risk of pain (Institute of Medicine, 2011). Pain also is more likely to be disabling among people with incomes of  $\leq$  \$25,000 or less than a high school education (Portenoy, Ugarte, Fuller, & Hass, 2004). Multiple factors are likely to contribute to these effects, as low SES may be associated with more physically demanding jobs, less stable job characteristics, inadequate insurance, and less availability of analgesic medications, such as opioids (e.g., Morrison, Wallenstein, Natale, Senzel, & Huang, 2000).

There also are data suggesting that the effects of race and SES on pain adjustment may differ over time. Workers' Compensation claimants with low back pain exhibit patterns of adjustment that reflect differing relative contributions of race and SES over time. Data collected two years postsettlement showed that Blacks received lower levels of care and demonstrated poorer outcomes than non-Hispanic Whites (Chibnall et al., 2005; Tait, Chibnall, Andresen, & Hadler, 2004): The contribution of race to those differences was significantly greater than that of SES. At six years postsettlement, however, the opposite relationship obtained (Chibnall & Tait, 2009): SES accounted for substantially greater variance in clinical adjustment than did race. The pattern reflects a greater contribution of race during the time frame of most active treatment, and a greater contribution of SES thereafter, likely reflecting differential access to resources. While the studies were not designed specifically to examine the relative contributions of race and SES over time, the results suggest that race and SES may impact adjustment to pain differently over the course of a chronic pain trajectory.

## Suggested Directions

Several initiatives are suggested by the findings related to minority distrust of the health care system. As noted in a previous section, a public educational campaign aimed at increased understanding of pain and its care could impact patient health care beliefs, empowering them to interact more assertively with health care professionals (Buchbinder et al., 2001). At a more individual level, a patient navigator model could provide more case-based assistance.

While a public health intervention directed at health care professionals could target the insidious but powerful effects of negative stereotypes on clinical judgments, those effects often are unrecognized or denied, undermining the likely effectiveness of such a campaign. More likely to be effective are initiatives such as the CoEPEs, which take a case-based approach to the challenges posed by chronic pain patients. Ideally, such training will find its way into the curricula offered to the range of health care professions (Thomas et al., 2012).

As noted in a recent report (Institute of Medicine, 2011), current public databases contain little information regarding pain and its consequences. The latter report recommends data collection to address the following domains: (a) the incidence and prevalence of various pain conditions, (b) pain-related interference/disability, (c) health care utilization related to pain, and (d) financial costs of pain. Large-scale databases encompassing such information could enable comparisons of treatment effectiveness across the many available treatments currently offered for pain conditions. We would add a further requirement—that the databases include mandatory fields in order to capture racial/ethnic categories. While this seems obvious in light of the current discussion, a number of public databases do not capture racial/ethnic identifiers, without which research is both difficult and costly (Tait et al., 2004).

Finally, we note the relative scarcity of longitudinal data regarding chronic pain trajectories. As noted earlier,

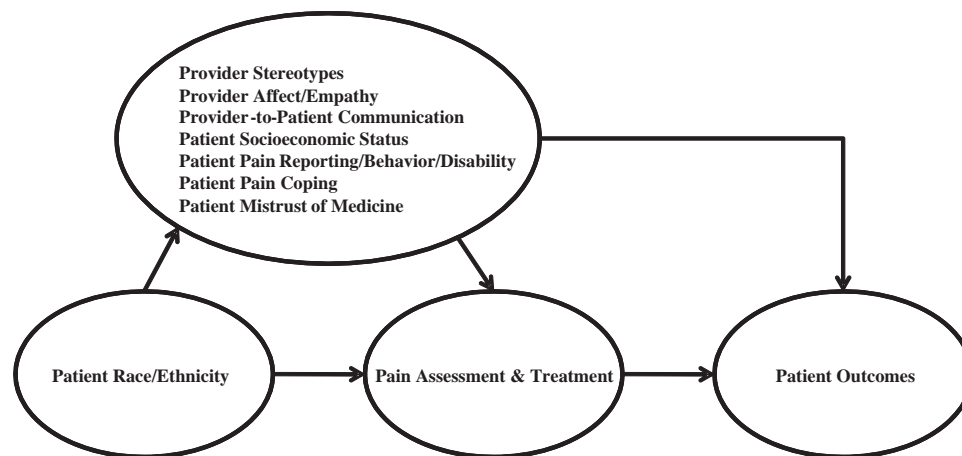
race/ethnicity and SES appear to contribute in nuanced ways to treatment and outcomes. Longitudinal data would enable investigators to ask appropriately nuanced questions about the relative effects of each (as well as other factors) over the course of a chronic pain condition. Answers to such questions are likely to point the way to targeted interventions that might mitigate some of those effects.

## Concluding Comments

In this article, we have examined a range of psychosocial factors that may contribute to documented racial/ethnic disparities in the assessment and treatment of chronic pain. These are summarized in Figure 3. At the assessment and provider levels, we focused particular attention on the effects of racial/ethnic stereotypes on clinical judgments. We suggest that stereotypes influence clinical judgments at implicit/unconscious levels and principally when providers face difficult decisions, such as those that exist when pain severity is reported to be high and the provider is faced with difficult choices (e.g., whether or not to prescribe opioids). Further, we believe that, as psychologists, it behooves us to clarify the conditions that are most likely to prime the activation of those stereotypes.

At the patient level, we examined literature that shows racial/ethnic differences in the experience of pain. As psychologists, we also are well placed to better our understanding of the factors that occasion such differences. The experimental literature suggests that heightened vigilance and, perhaps, negative affect are important contributors to the minority experience of pain. The clinical literature suggests that further attention to racial/ethnic differences in coping with pain is needed, preferably over a multi-institutional database. Possibly, with ACA support, studies on comparative outcomes could be done across multiple institutions, leading to conclusions that could be drawn more confidently than is presently possible from single-institution studies. We believe that a multi-institution study of a

**Figure 3**  
*Factors Contributing to Racial/Ethnic Disparities in Pain Assessment, Treatment, and Outcome*





patient navigation model for minorities with chronic pain also holds promise: Patient navigators may address many of the obstacles that minorities face as they interact with providers across the health care system. Of course, the latter consideration echoes another public health need—uniform data regarding pain and its sequelae in national or at least multi-provider databases. Ideally, such databases can yield longitudinal perspectives on pain and its consequent events. If paired with regional and/or national educational campaigns, the databases also could be used for program evaluation.

All of the above initiatives, of course, require investment, both financial and intellectual. As the tolls associated with pain and disparities in health care are tallied and the huge impact of pain is recognized, federal resources hopefully will be directed at this problem. Such resources will likely be repaid with improved pain care, reduced pain costs (personal and societal), and a more equitable distribution of those costs. Given the high degree to which psychosocial factors contribute to disparities in pain care, psychologists also must provide resources, especially the intellectual resources needed to accomplish these goals.

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