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STATE OF THE ART AND SCIENCE:

Race, Discrimination, and Cardiovascular Disease

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It is now well documented that there are profound race-associated disparities among those who are affected by and die from cardiovascular disease (CVD) [1]. These disparities are deeply rooted within the history of race and medicine in the US. Blacks continue to have the highest burden of coronary heart disease (CHD) mortality among all ethnic groups in the US [2], despite an overall decline in CHD-related mortality among the general population [3]. Black patients also have a higher prevalence of CVD risk factors (e.g., diabetes, hypertension, hyperlipidemia, and obesity) than white patients [4]. This persistent incongruity has compelled investigators to look beyond traditional risk factors for CVD towards psychosocial risk factors in an effort to better comprehend and offer solutions to the issue [4]. Individual psychological stress has emerged as a potential nontraditional CVD risk factor that has garnered much attention [5]. There is a growing interest in elucidating how chronic exposure to racial/ethnic discrimination, a psychosocial stressor, contributes to observed CVD and cardiovascular care disparities.

Race as a Stressor

Racial and ethnic discrimination has been postulated as a multidimensional environmental stressor at the societal and individual levels. That is, there are physiological consequences of chronic exposure to fluctuating or heightened neural or neuroendocrine response that results from repeated or chronic stress. Over time, these stressful life experiences can have detrimental effects on the health of people in historically marginalized groups. There is now compelling evidence linking the perception of racism to cardiovascular health [6]. Race-related stress is perceived by many blacks as an influential factor towards their elevated CVD risk [6]. Whether personally or institutionally mediated, race-related stress may also increase the propensity to engage in negative health behaviors, which can have a deleterious impact on the management of multiple CVD risk factors by minority populations. There is a dearth of empirical data to truly encapsulate and assess the individual experience of chronic exposure to discrimination across the lifespan. Recent studies have examined novel measures of perceived racial/ethnic discrimination as surrogates of individuals' experience and awareness of race and their influences on CVD risk factors [7–9].

Race consciousness has been posited as a novel measure of perceived racism at the individual level that captures a heightened vigilance and anticipatory stress related to the threat of discrimination. Our study of a large sample of urban primary care patients (n=266) found that experiencing race consciousness was associated with higher diastolic blood pressure and may be associated with higher systolic blood pressure among black but not white patients with hypertension [7]. Hicken and colleagues further examined the pathologic effect of racism-related vigilance, or chronic stress as a result of anticipation of or

perseveration on racial discrimination, on hypertension [8]. They reported that blacks with the highest vigilance levels had a higher likelihood of hypertension than whites.

Prior studies investigating the effect of personally-mediated and internalized racism have been limited by the paucity of comprehensive measures encompassing the multiple dimensions of discrimination in varied domains (e.g., education, housing, health care). In an attempt to address this dilemma, Jackson Heart Study investigators assessed multiple measures of discrimination (including perceived everyday and lifetime occurrence, frequency, and attribution) and burden (extent of stressfulness and loss of productivity to one's life) and the relationship with hypertension prevalence among the African American cohort [9]. Higher quartiles of lifetime discrimination and burden of discrimination were associated with greater hypertension prevalence after adjustment for age, gender, and socioeconomic status.

Race Influence on Access and Quality of Care

Race-based discriminatory attitudes and behaviors by health care professionals may contribute to suboptimal diagnosis and management of CVD among patients from minority groups, particularly blacks. Additionally, entrenched institutional racism leads to inequities in access to and quality of health care. Studies have demonstrated pervasive disparities between treatment of blacks and whites in health care delivery in realms such as clinician adherence to prescribing guidelines, therapy intensification, and use of invasive cardiac procedures, even after controlling for clinical and socioeconomic factors [1].

Members of minority groups continue to experience inequities in the receipt of effective therapies for acute coronary syndromes, including cardiac catheterization, percutaneous coronary interventions, and surgical revascularization. Among patients presenting with acute myocardial infarction (MI), blacks are less likely to be admitted to medical facilities with revascularization capabilities and high-quality acute MI outcomes [1]. The authors of one study ascribed this disparity to unmeasured characteristics such as social and environmental barriers to care [10]. Furthermore, despite a number of national quality improvement initiatives such as the Get With The Guidelines-Coronary Artery Disease program, blacks have lower odds of achieving a door-to-balloon time of less than 90 minutes, a quality indicator in cardiac care, and see longer revascularization times than their white counterparts [11]. These reperfusion delays seem to be particularly worse for black male patients [11]. This warrants further investigation of the physician and system factors and other individual patient factors—beyond race—that perpetuate this disparity.

Cardiac clinicians, including cardiologists and cardiac surgeons are key players in the provision of appropriate and high-quality cardiovascular care, and many are unaware of the existence of racial/ethnic disparities in cardiac care. Among surveyed cardiologists, only about one-third agreed that racial/ethnic disparities exist in cardiac care in the US, only 12 percent felt that they were in existence at their at own medical institution, and even fewer (5 percent), in their own patients [12]. Most thought-provoking was a lower perception of health disparities in the overall health care system and their own practice settings among clinicians caring for higher proportions of black and Hispanic patients. This may represent a

lack of recognition among cardiac clinicians of race-based differences in their own delivery of care. One study showed a substantial variation by race and gender in referral of standardized patients with similar presentations of cardiac symptoms for cardiac catheterization [13]. This suggests a role for stereotyping or bias (whether conscious or unconscious) in physician decision making in the delivery of guideline-concordant care.

In addition, cardiac clinicians identified patient factors (e.g., nonadherence to therapy and health behaviors) as the greatest contributors to disparities in health care, rather than health system and individual physician practices [12]. Although many physicians reckoned that the majority of patients needed to adopt more effective self-management skills, more insight is needed among physicians in recognizing psychosocial risk factors (such as stress) that affect their patients' ability to do so. This is especially important because physicians play a critical role in educating, supporting, and motivating patients toward active participation in their own health care [14].

Race, the Patient-Clinician Relationship, and Adherence to Medical Therapy

The patient-clinician relationship can either promote or discourage patient engagement in self-management of chronic medical conditions such as CVD. The personal experience of racially discriminatory practices such as stereotyping and expressing prejudice in the health care setting can reduce patients' use of health care services and have a negative impact on patient adherence and satisfaction. Any impairment to the patient-clinician relationship through patient perception of discrimination can derail optimal health outcomes. Patients reported perceived racial discrimination by physicians during clinical encounters, ranging from subtle passivity or apathy towards reaching a diagnosis to more overt avoidance of touch, distressing and disrespectful [15]. Such physician behaviors ultimately led to a lack of trust of the medical infrastructure on the part of surveyed black patients with hypertension, which they postulated may be an important barrier to appointment attendance. Reactive medical nonadherence by such a high-risk patient population could further perpetuate CVD disparities.

But is patient refusal or rejection of medical advice or services driving cardiovascular health disparities? We would argue not so much, as patient refusal accounts for only a small proportion of observed racial variances [16]. It is more germane to address potential problems in patient-physician communication, the cornerstone to shared decision making and health outcomes. Blacks have been found to receive less patient-centered care as evidenced by less psychosocial and rapport-building and shorter medical visits than whites with similar CVD risk factor profiles [14]. This may leave black patients at a disadvantage; they may receive inadequate medical counseling and have inaccurate perceptions about the seriousness of their medical conditions and the necessity of chronic therapy. This is of particular concern in CHD, because many of its risk factors (e.g., hypertension and hyperlipidemia) are asymptomatic until the development of potentially disastrous events such as acute MI.

Conclusion

An urgent need remains for research aimed at understanding the effects of experiences of race/ethnicity-based discrimination as psychosocial stressors on CVD risk and outcomes. This research could have a significant impact on future clinical and public health practice. Efforts are needed to educate physicians about race/ethnicity-based health disparities in cardiovascular care and the influences of psychosocial and environmental stressors on cardiovascular health. Additionally, medical education programs should help physicians develop skills to partner with and engender the trust of patients who are members of marginalized groups and to engage with community groups and organizations to identify innovative strategies to overcome health disparities.

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