MAYO CLINIC

ORIGINAL ARTICLE

Perceived Discrimination and Cardiovascular Outcomes in Older African Americans: Insights From the Jackson Heart Study

Shannon M. Dunlay, MD, MS; Steven J. Lippmann, PhD; Melissa A. Greiner, MS; Emily C. O'Brien, PhD; Alanna M. Chamberlain, PhD; Robert J. Mentz, MD; and Mario Sims, PhD, MS

Abstract

Objective: To assess the associations of perceived discrimination and cardiovascular (CV) outcomes in African Americans (AAs) in the Jackson Heart Study.

Patients and Methods: In 5085 AAs free of clinical CV disease at baseline enrolled in the Jackson Heart Study from September 26, 2000, through March 31, 2004, and followed through 2012, associations of everyday discrimination (frequency of occurrences of perceived unfair treatment) and lifetime discrimination (perceived unfair treatment in 9 life domains) with CV outcomes (all-cause mortality, incident coronary heart disease [CHD], incident stroke, and heart failure [HF] hospitalization) were examined using Cox proportional hazards regression models.

Results: Higher levels of everyday and lifetime discrimination were more common in participants who were younger and male and had higher education and income, lower perceived standing in the community, worse perceived health care access, and fewer comorbidities. Before adjustment, higher levels of everyday and lifetime discrimination were associated with a lower risk of all-cause mortality, incident CHD, stroke, and HF hospitalization. After adjustment for potential confounders, we found no association of everyday and lifetime discrimination with incident CHD, incident stroke, or HF hospitalization; however, a decrease in all-cause mortality with progressively higher levels of everyday discrimination persisted (hazard ratio per point increase in discrimination measure, 0.90; 95% CI, 0.82-0.99; P=.02). The unexpected association of everyday discrimination and all-cause mortality was partially mediated by perceived stress.

Conclusion: We found no independent association of perceived discrimination with risk of incident CV disease or HF hospitalization in this AA population. An observed paradoxical negative association of everyday discrimination and all-cause mortality was partially mediated by perceived stress.

 ■ Mayo Clin Proc. 2017;92(5):699-709

In 1985, the Heckler report[1] found that African Americans (AAs) experienced worse health outcomes than did whites in the United States. Today, AAs still suffer from a higher burden of adverse cardiovascular (CV) risk factors such as hypertension[2,3] and obesity[4] and are more likely to develop chronic CV conditions such as heart failure (HF).[5,6] Perceived discrimination has been shown to play a role in the development of CV risk factors such as hypertension in AAs,[7] but the associations with CV outcomes have been less thoroughly examined. A recent report[8] from a multiethnic cohort study found a modestly increased risk of CV events in participants reporting discrimination. Whether this association persists in an exclusively AA population requires further examination. A better understanding of the role of discrimination in AAs is of particular importance in designing public health prevention efforts, as AAs are not only disproportionately affected with CV disease (CVD) compared with other races and ethnicities but also most likely to report discrimination.[8,9] Furthermore, the way in which racial discrimination may lead to differences in health risks and outcomes may be complex and mediated by psychosocial factors such as poverty and education.

For editorial comment, see page 689

From Mayo Clinic, Rochester, MN (S.M.D., A.M.C.); Duke Clinical Research Institute, Durham, NC (S.J.L., M.A.G., E.C.O., R.J.M.); and University of Mississippi Medical Center, Jackson (M.S.).

The extensive clinical and psychosocial data collected in the Jackson Heart Study (JHS) provide a framework to investigate whether perceived racial discrimination is associated with CV health outcomes and how other psychosocial constructs may mediate this relationship. The goals of this study were to determine the effect of perceived discrimination on outcomes (all-cause mortality, incident stroke, incident coronary heart disease [CHD], and HF hospitalization) and to test the hypothesis that individuals with higher levels of perceived discrimination experience worse outcomes and have a higher risk of incident CVD.

PATIENTS AND METHODS

Data Sources

We used data from the JHS, a cohort study of AA adults from the Jackson, Mississippi, metropolitan area developed to evaluate risk factors for CV outcomes in this community. Detailed study methods are reported elsewhere.[10-13] Briefly, 5301 participants, aged 21 to 94 years, were enrolled from September 26, 2000, through March 31, 2004. Participants had a baseline clinical examination and provided responses to interviews and questionnaires on topics including demographic characteristics, social and economic factors, medical history, and medications. This analysis uses data collected during the baseline examination visits and follow-up event surveillance data gathered through December 31, 2012. The JHS was approved by the institutional review boards of Jackson State University, Tougaloo College, the University of Mississippi Medical Center, and the Duke University Health System. All study participants gave written informed consent.

Study Population

We included all participants who completed the everyday and lifetime sections of the discrimination instrument at the baseline examination visit. For incident stroke and incident CHD, we excluded patients with prevalent stroke or prevalent CHD at the baseline examination visit, respectively. For HF hospitalization, we included participants who survived through January 1, 2005, the start date of HF hospitalization surveillance.

Exposure Definition

Perceived discrimination was measured using 3 scales from the JHS discrimination instrument.[7,12,14] The *everyday discrimination* scale consists of 9 statements following the question "How often on a day-to-day basis do you have the following experiences?" Examples include "You are treated with less respect than other people," "People act as if they think you are not smart," and "You are threatened or harassed." Response choices range from "never" (1) to "several times a day" (7), assessing frequency of everyday discrimination. The mean of the 9 responses was treated as a continuous variable (range, 1-7). The *lifetime discrimination* scale consists of 9 domains following the question "Have you ever felt unfairly treated…?" Examples include "in getting a job," "at school or during training," and "in getting resources or money." The sum of the binary responses ("yes"=1; "no"=0) was used as a continuous measure (range, 0-9). Finally, the *burden of lifetime discrimination* scale is composed of 3 questions asking participants to rate how stressful these experiences have been, to what extent discrimination has interfered with having a full and productive life, and how much harder life has been due to discrimination, scored on a 1 to 4 scale, in which 4 represents the greatest burden.

Outcome Ascertainment

Cardiovascular end points were ascertained by annual telephone follow-up interviews, surveillance of hospitalizations with adjudicated medical abstraction review, and death certificate review.[15] Hospital discharge lists are reviewed for *International Classification of Diseases, Ninth Revision* codes for CV events (CHD, stroke, and HF), and if present, hospital records are reviewed in detail by trained abstractors with data entered into a computerized system. For incident stroke and incident CHD events, computerized event data are subsequently reviewed and events adjudicated by a committee. Surveillance for incident stroke, incident CHD, and deaths began on September 26, 2000; surveillance of HF hospitalizations began on January 1, 2005; as a result of the delay in HF hospitalization surveillance, we measured time to first HF hospitalization after January 1, 2005, but cannot

Mayo Clin Proc. ■ May 2017;92(5):699-709 ■ http://dx.doi.org/10.1016/j.mayocp.2017.01.024
www.mayoclinicproceedings.org