Headache in African Americans: An Overlooked Disparity

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Purpose: The persistence of health disparities in the U.S. has necessitated additional research on race-related health disparities among Americans. Remarkably little research has examined race differences in persons with headache disorders, even though 45 million Americans experience episodic or chronic headaches annually. This review paper examined peer-reviewed publication to examine potential race differences in persons with headache disorders in the areas of headache epidemiology, headache characteristics, psychiatric comorbidity, treatment utilization, and treatment outcomes.

Procedures: A multi-database search (PubMed, Web of Science, PsychINFO) identified U.S. studies that enrolled racially diverse samples of persons with headache disorders and qualitatively examined potential race-related disparities.

Main Findings: Compared to their Caucasian counterparts, African American headache patients are more likely to (i) be diagnosed with comorbid depressive disorders; (ii) report headaches that are more frequent and severe in nature, (iii) have their headaches under-diagnosed and/or undertreated; and (iv) discontinue treatment prematurely, regardless of socioeconomic status.

Principal Conclusions: State of the science treatments for chronic headaches are efficacious; unfortunately, race–related disparities prevent African American headache patients from benefiting from these treatments. Research is needed that enables African Americans with severe headaches to access current headache treatments to alleviate headache burden on the African American community.

Keywords: Headache ■ Race ■ Health Disparities ■ African Americans ■ Ethnicity

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A "health disparity" involves "differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that disproportionately affect specific populations in the United States."[1] In this definition, populations are often defined by factors such as socioeconomic status, gender, geographic residence and, very often, race or ethnicity. While there is no known biological reason why race should produce health disparities, race is an important determinant of health status, the receipt of and adherence to health care services, and treatment outcomes in clinical populations in the United States.[2–6]

Over the past decade, the persistence of health disparities in the U.S. has necessitated the conduct of considerable research to better identify and intervene upon race-related health disparities in Americans. Much of this research has focused on "high profile" chronic health conditions, such as diabetes, cancer, and HIV/AIDS. Compared to the majority population (i.e., Caucasians), U.S. ethnic minority populations have shorter overall life expectancies and higher prevalence rates of cardiovascular disease, cancer, infant mortality, birth defects, asthma, HIV/AIDS, diabetes, stroke, and STDs.[7] However, given the high prevalence rates of pain conditions in Americans (i.e., 14–64%),[8–10] surprisingly few studies have examined race differences in persons with pain conditions.

The scant amount of research that has examined race differences in pain have been conducted in laboratory and clinical settings. In laboratory-based studies, research examining race differences in experimentally-induced acute pain consistently found higher ratings of heat pain unpleasantness in African Americans relative to Caucasians.[11] Additionally, African Americans were more likely to report significantly lower pain tolerances across various types of pain stimuli, including heat pain, ischemic pain and cold-pressor pain.

In clinical settings, a growing amount of research has found that racial-ethnic minorities are more likely to be under-diagnosed and under-treated for their chronic pain conditions.[11–15] African American women with chronic pain reported more functional impairment, more PTSD, and less depression than Caucasian women with chronic pain. Greater pain-related disability was associated with increased emotional impairment in African American women compared to Caucasians.[13] Among males, African American men with chronic pain reported more severe pain, greater disability, elevated rates of depression, and poorer treatment outcomes compared to Caucasian men.[16]

In the area of health care utilization in persons with chronic pain conditions, African Americans are more likely to seek treatment for the pain in emergency rooms compared to Caucasians. Factors such as delayed treatment seeking behaviors[13] and/or limited and inadequate access to pain medications through one's local pharmacy may explain why African Americans present to emergency rooms for pain treatment at disproportionately higher rates than Caucasians.

HEADACHES AND THE AFRICAN AMERICAN COMMUNITY

Although 45 million Americans experience episodic or chronic headaches each year,[18] surprisingly little research has examined race differences in persons with headache disorders, The National Institute of Neurological Disorders and Stroke (NINDS), the institute of NIH that is most responsible for funding headache research, directed less than $10 million to headache research in 2009. Of this $10 million, very little was allocated to the examination of race differences in persons with headache disorders.[19,20]

Headache disorders are of considerable public health importance to the African American community. In the United States, approximately one in six African Americans is diagnosed with migraine disorder and one in five is diagnosed with tension-type headache.[21] Headaches are associated with high rates of employee absenteeism, reduced work efficiency (i.e., being mentally present), poorer emotional and social well-being, and may be comorbid with heart disease, hyperlipidemia, hypertension, and diabetes.[22–24] Moreover, the life quality of persons with headache disorders is poorer than those reported by persons with hypertension, diabetes, and osteoarthritis.[25] The economic impact and psychosocial burden of headache on individuals and society in general is well-documented.[26–29] However, research investigating race-related differences and potential health care disparities in persons with headache disorders is essentially non-existent.

This paper will characterize and discuss race-related disparities in persons with headaches, particularly in the areas of headache epidemiology, headache characteristics, psychiatric comorbidity, treatment utilization, and treatment outcomes. Understanding potential race-related differences in headache patients can inform the development of health care policies and interventions that are culturally-contextualized and are more likely to mitigate, or eliminate entirely, race-related headache disparities.

LITERATURE REVIEW METHODOLOGY

A multi-database search was conducted to identify published articles that enrolled racially-diverse samples and reported on race-related differences between African Americans and members of other racial groups. No limit was placed on publication period and articles were included from the following diverse areas: neurology; primary care medicine; psychiatry; behavioral medicine; epidemiology; health sciences; and public health using. The PubMed, Web of Science and PsychINFO databases were searched using the following keywords: race; racial; pain; chronic pain; African Americans; ethnicity; headache; migraine; and tension-type headaches. Research reports were included in the review if they reported on race differences in one or more of the following areas: (i) prevalence and incidence rates; (ii) headache diagnoses and characteristics; (iii) psychiatric disorders; (iv) treatment adherence; (v) access to treatment; and (vi) treatment outcomes. Only articles published in English were included in the review.

HEADACHE EPIDEMIOLOGY: ARE HEADACHES UNDER-DIAGNOSED IN AFRICAN AMERICANS?

The first part of the literature review focused on race-related differences in prevalence and incidence rates of headache disorders. Epidemiologic headache research plays a critical role in identifying: (i) sociodemographic, genetic, and environmental factors associated with headache disorders; (ii) potential causal links between intrapersonal, interpersonal, and environmental factors and headache disorders; and (iii) groups in greatest need of medical and psychological treatments to reduce their headache activity and improve their quality of life.[30,31]

Tension type headache (TTH) and migraine. Research with U.S. samples has consistently found higher prevalence rates of migraine and tension type headache (TTH) disorders in Caucasian Americans compared to African Americans. One-year prevalence rates of episodic TTH (ETTH) are higher in Caucasian Americans (46% women, 40% men) than African Americans (30.9% women, 22.8% men; 19). African American men (22.8%) and women (30.9%) also have lower prevalence rates of chronic TTH (CTTH) than Caucasian American men (40.1%) and women (46.8%; 19). Epidemiologic studies also consistently find higher prevalence rates of migraine in Caucasian Americans (20.4% women, 8.6% men) compared to African Americans (16.2% women, 7.2% men.[29,32–34]

Probable migraine. Probable migraine, a subtype of migraine that satisfies all but one criterion of a migraine diagnosis, has received little attention in the headache literature. This is troubling given that probable migraine produces impairments in physical and psychosocial functioning that are comparable to conventional migraine disorders. Probable migraine is also under-diagnosed and under-treated in the general population, with 79% of individuals who receive a probable migraine diagnosis being unaware that they are living with the disorder.[35,36]

While only one published study could be found that reported on race differences in probable migraine, this study found a higher prevalence rate of probable migraine in African Americans (64%) than Caucasian Americans (43%).[35]

Cluster headache. Cluster headaches are the most severe of the primary headaches and are characterized by one-sided head pain that is often experienced as severe and sudden in onset, and, in many cases, restlessness. Cluster headaches have a lifetime prevalence of 124 per 100,000 and a 1-year prevalence of 53 per 100,000 (CI 26, 95). Males are disproportionately affected by cluster headaches with an overall sex ratio (male to female) of 4.3. Unfortunately, racial differences in the epidemiology of cluster headaches are poorly understood. It has been determined that African Americans with cluster headaches are more likely to receive a delayed diagnosis for their condition compared to Caucasian Americans.[37]