

Relationship Between Chronic Conditions and Disability in African American Men and Women

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Background: Race differences in chronic conditions and disability are well established; however, little is known about the association between specific chronic conditions and disability in African Americans. This is important because African Americans have higher rates and earlier onset of both chronic conditions and disability than white Americans.

Methods: We examined the relationship between chronic conditions and disability in 602 African Americans aged 50 years and older in the Baltimore Study of Black Aging. Disability was measured using self-report of difficulty in activities of daily living (ADL). Medical conditions included diagnosed self-reports of asthma, depressive symptoms, arthritis, cancer, diabetes, cardiovascular disease (CVD), stroke, and hypertension.

Results: After adjusting for age, high school graduation, income, and marital status, African Americans who reported arthritis (women: odds ratio (OR)=4.87; 95% confidence interval(CI): 2.92–8.12; men: OR=2.93; 95% CI: 1.36–6.30) had higher odds of disability compared to those who did not report having arthritis. Women who reported major depressive symptoms (OR=2.59; 95% CI: 1.43–4.69) or diabetes (OR=1.83; 95% CI: 1.14–2.95) had higher odds of disability than women who did not report having these conditions. Men who reported having CVD (OR=2.77; 95% CI: 1.03–7.41) had higher odds of disability than men who did not report having CVD.

Conclusions: These findings demonstrate the importance of chronic conditions in understanding disability in African Americans and how it varies by gender. Also, these findings underscore the importance of developing health promoting strategies focused on chronic disease prevention and management to delay or postpone disability in African Americans.

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INTRODUCTION

The segment of the population 65 years of age and older is steadily increasing and becoming more racially diverse.^{1,2} The proportion of older African Americans is projected to triple by 2050.³ This increase is partly attributed to medical advances resulting in people living longer with chronic conditions,⁴ yet one of the primary outcomes of chronic conditions among older adults is disability. In addition, disability is strongly associated with adverse health events such as nursing home admission, hospitalization, and mortality.⁵⁻¹² The link between chronic conditions and disability has important implications that vary by race, socioeconomic status, or age. African American older adults consistently exhibit a higher prevalence of chronic conditions and disability compared to white older adults.¹³⁻¹⁷

There is a growing body of research that seeks to understand the relationship between specific chronic conditions and disability.¹⁸⁻²⁴ Although these studies have informed how specific conditions affect disability as well as how these conditions contribute to race- and socioeconomic-related differences in disability, little research is known about the association between chronic conditions and disability among African Americans.^{25,26} This is somewhat surprising given the higher rates of disability and chronic conditions in older African Americans compared to older white Americans.

African Americans have higher rates of diseases that can have disabling effects²⁷ than whites do, as well as less access to high quality health care for those conditions.²⁸ For example, diabetes, which is more prevalent in African Americans than whites,²⁹ can lead to diabetic retinopathy. Diabetic retinopathy can lead to vision loss, which leads to further disability.³⁰⁻³³ Also arthritis is the most commonly reported cause of disability, and the third leading cause of work limitation in the United States.³⁴⁻³⁶ African American men have higher rates of diabetes than African American women.³⁷ Osteoarthritis in the hand can weaken grip strength, which leads to difficulty in daily

functional activities such as opening doors, medication bottles, and food jars.³⁸ African American women are at the highest risk for developing knee OA and needing joint replacement surgery than African American men, white men, and white women.³⁹ Stroke is another major cause of disability that often results in paralysis, weakened limbs, altered gait, and speech difficulties.⁴⁰ African Americans are more likely to experience disability after a stroke than their white counterparts, and African American men have more strokes than African American women, white men, and white women.⁴¹ The higher prevalence of these potentially disabling diseases among African Americans contributes to a higher African American disability rate compared to whites as well as the fact that these diseases affect African Americans at younger ages than they do whites.^{25,26,42-44}

Researchers have also highlighted the disabling effects of chronic conditions in African Americans by conducting within sex group studies. For example, it is well documented that African American women with osteoarthritis are more likely to experience functional limitations and disability than white women with osteoarthritis.^{45,46} In addition, researchers have reported that African American women with breast cancer are more likely to be disabled than white women with breast cancer.⁴⁷ Among men with chronic pain African Americans had higher rates of disability from chronic pain than whites.⁴⁸ Warner and Brown reported that African American women reportedly have higher rates of disability than African American men, white men and white women.⁴⁹ However these scholars did not examine the relationship between chronic conditions and disability by sex groups. Further work is needed to understand the relationship between chronic conditions and disability by sex among African Americans.

Despite these striking differences in prevalence and time of onset of chronic disease as well as disability, little is known about the association between specific chronic conditions and disability in African Americans.^{18,27,50,51} Researchers need to further examine the relationships that exist between chronic conditions and disability in African Americans, which can support development of strategies needed to promote health, enhance quality of life and decrease disability rates in African Americans living with chronic disabling conditions.⁵² Understanding within-group differences is a key step to better understanding between-group differences.^{53,54} Furthermore, understanding the within-group variability provides insights on the ways in which factors interact within an adversely affected group and not just the differences between groups.^{53,54} Thus the objective of this study is to examine the association between specific chronic conditions and disability in African American older adults.

METHOD

Study Population

Data are from the Patterns of Cognitive Aging (PCA) study, which is part of a larger group of aging studies known as the Baltimore Study of Black Aging (BSBA). The sample consisted of 602 community-dwelling African Americans between the ages of 48 and 92 at the beginning of the study. These participants were recruited from 29 senior apartment complexes in the city of Baltimore, Maryland. Data collection lasted 18 months and took place between 2006 and 2008. The interviews lasted 2.5 hours on average and consisted of a face-to-face interview in which there were three blood pressure measurements, three lung function measurements, a battery of cognitive tests, and information collected on physical and mental health. All participants signed a written informed consent agreement approved by the institutional review board at Duke University and received monetary compensation for their participation.

MEASURES

Disability

The outcome variable for this study is disability. This variable was derived from the participant's report of difficulty in performing basic activities of daily living (ADLs). This included eating, dressing, grooming, walking, bathing, using the toilet, and transferring in and out of bed.⁵⁵ The four possible response categories included: never need help (1), have difficulty but can do without help (2), have difficulty and need help (3), and never do the activity (4). A binary variable was created for each ADL to indicate whether the individual had difficulty in performing that specific activity. After summing these seven binary variables, a dichotomous variable for disability was created to identify those individuals who had difficulty in a least one ADL. This approach is similar to the approach of other investigators.^{17,25,56}

Medical Conditions

Medical conditions included depressive symptoms and chronic health conditions. Depressive symptoms were assessed using the 20-item Center for Epidemiological Studies Depression (CES-D) Scale.^{57,58} A binary variable was created to characterize participants who scored 16 and above as having major depressive symptom.^{57,58} Chronic health conditions were based on participants' report of physician diagnoses of the following: angina, asthma, arthritis, cardiovascular disease (CVD), diabetes, stroke, heart attack, or high blood pressure. Each of the chronic conditions was coded as a binary variable (1=present;

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