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## Persistence, Impairment, Disability and Unmet Treatment of Lifetime and 12-Month Anxiety Disorders in Black Men and Women, 50 Years of Age and Older

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### Abstract

**Objectives:** To examine anxiety disorders in aging Black adults.

**Methods:** Using nationally representative data from the National Survey of American Life, we estimated lifetime/12-month prevalence of DSM-IV anxiety disorders in Black men and women, age 50+ (N=1,561). Disorder-specific persistence and severity, functional impairment and mental health service utilization were investigated using multivariate regressions.

**Results:** Black men and women who met criteria for anxiety disorders (lifetime prevalence=12.4%/18.3% in men/women) also demonstrated persistent disorders (percent meeting criteria=40.3%–61.2%). Those with a 12-month anxiety disorder (6.2%/10.5% of men/women) typically reported severe task interference (38.3%–85.7%). Those with any 12-month anxiety disorder, compared to those without, experienced greater impairment in days out of role, work, family burden, cognition and, in women, mobility ( $p$ 's<.05). Only 47.0%/65.2% of Black men/women with any lifetime anxiety disorder used mental health services.

**Discussion:** Despite low prevalence, older Blacks with anxiety disorders experience substantial mental health burden in middle age and later.

## Keywords

PTSD; Mental Health Services; Gender; Impairment; gerontology; functional status; COVID

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## Introduction

There is a growing public health concern about the role that anxiety disorders are playing in the poor prognosis of the health and well-being of America's 60 years and older population (Santini et al., 2020). While the prevalence of these disorders in non-Hispanic Black populations are often equal to or lower than those in non-Hispanic White populations, when such disorders are present research indicates they tend to be more persistent, impairing, undiagnosed and untreated (Jones et al., 2018; Jones et al., 2020; Leach & Hall, 2014; Mays et al., 2018; Santini et al., 2020). Carden et al. (2021) cite a difference in the detection rate of generalized anxiety disorders (GAD) in non-Hispanic-Blacks (4.9%) versus that of non-Hispanic Whites (8.6%) as a key factor in the low prevalence rates reported in prior studies. However, in studies of GAD, Blacks in the U.S. tend to suffer greater severity of the illness, high rates of unemployment, and low rates of treatment utilization (Carden et al., 2021; Jones et al., 2020; Mays et al., 2018; Sibrava et al., 2013). Even when treated, non-Hispanic Blacks with GAD have been observed to have a lower 2-year recovery rate compared to non-Hispanic Whites (0.23 vs 0.39) again indicating that despite the lower prevalence, there may be higher morbidity from GAD in Blacks (Sibrava et al., 2013).

By the year 2050, Black adults will comprise 12% of the older population in the United States, an increase resulting in more than 1.5 million Blacks over the age of 50 (Passel & Cohn, 2008). The Black elderly over the age of 85 are expected to be second only to Latino/a/x in their rate of increase (Mintzer et al., 2005; Vincent & Velkoff, 2010). While there has been a growing number of epidemiologic studies of psychiatric disorders among Black Americans (Taylor & Chatters, 2020), much of that research has yet to provide researchers and clinicians with an in-depth understanding of these disorders in aging populations. Such information is needed to offer a better clinical case conceptualization and to guide culturally specific assessment and treatment options (Carden et al., 2021). Regardless of race or ethnicity, anxiety disorders are undertreated in older adults, contributing to excess late-life morbidity and premature mortality (Carriere et al., 2013). Older Black adults, including African Americans (AA) and Caribbean Blacks, are even less likely than Whites to receive any mental health services (Byers et al., 2012). Untreated anxiety may be especially burdensome for older Black adults as this group experiences chronic health conditions that contribute to years lived with a disability (YLD) and shortened life expectancy (Johnson-Lawrence et al., 2013; Kaufman et al., 2019).

Nevertheless, few studies have examined the burden of illness associated with anxiety disorders in older Black adults. Population-based studies of anxiety disorder severity, persistence, and functional impairment have typically focused on younger samples (Breslau et al., 2005; Himle et al., 2009; Jones et al., 2020; Mays et al., 2018). Because anxiety disorders often start in early and middle adulthood (Kessler et al., 2005), those disorders lasting into older age are likely to be associated with years of living with a disability

and may worsen the prevalence of physical health problems (Byers et al., 2014). Prior studies also suggest gendered patterns of disorder prevalence and help seeking, with anxiety disorders more often experienced in Black women versus men in general (Ford et al., 2007; Himle et al., 2009; Levine et al., 2013). But there has been less attention to how anxiety disorders affect aging men and women in terms of their work and home responsibilities, mobility, cognitive functioning, social relationships, and family (Taylor & Chatters, 2020).

The goal of the current study is to describe anxiety disorders among older Black adults. We examine the lifetime and 12-month prevalence of anxiety disorders; persistence and severity of interference from those disorders; their impacts on functional impairment; and patterns of mental health services use. Because men and women are likely to have unique experiences of anxiety disorders, we report findings separately for men and women when the sample size allows. Information on the unmet mental health treatment needs of older Black populations is also needed at the current time when older adults have experienced heightened social isolation, loneliness and anxiety under COVID-19 pandemic conditions (Kotwal et al., 2021). To that end, we focus on the prevalence, severity, disability, and help seeking for anxiety disorders among older Black men and women in the hopes of informing mental health service planning post COVID-19.

## Methods

### Study Design and Procedures

We used information drawn from the National Survey of American Life (NSAL), a nationally representative, population-based survey of Diagnostic and Statistical Manual of Mental Disorders 4th Edition (DSM-IV) psychiatric disorders and mental health service utilization among Black Americans (Jackson, Neighbors, et al., 2004). The NSAL is the largest survey of psychiatric disorders among Black Americans and the first nationally representative survey of Caribbeans of African descent (“Black Caribbeans”) in the U.S. The overall response rate was 72.3%, which is excellent given the difficulties often encountered in obtaining face-to-face interviews with African Americans. Further details of the NSAL sample, particularly for older participants, can be found elsewhere (Taylor et al., 2007). The present study focused on later middle age (defined here as ages 50–64) and older Black adults (ages 65 and older). This included 1,561 participants age 50 or older, of whom 1,135 were African American and 958 were women.

### Measures

**Prevalence.**—Probable lifetime and twelve-month psychiatric disorders were assessed using the World Mental Health version of the World Health Organization’s Composite International Diagnostic Interview (WHO-CIDI) (Jackson, Torres, et al., 2004; World Health Organization, 2017–2018). The WHO-CIDI is a fully structured interview used to determine the prevalence of DSM-IV psychiatric disorders. We examined five anxiety disorders: General Anxiety Disorder (GAD), Panic Disorder, Agoraphobia, Social Phobia, and Post-Traumatic Stress Disorder (PTSD). For these, we estimated the prevalence of meeting criteria for at least one anxiety disorder during the lifetime and in the twelve months prior to the interview.

**Persistence.**—Persistence, a measure of chronicity, was estimated for the subsample of participants who met the criteria for a lifetime anxiety disorder and who reported an age of onset at least two years prior to the interview. We calculated the proportion of this subsample who also met criteria for the same disorder in the twelve months prior to the interview (Jones et al., 2020; Mays et al., 2018). This measure captures chronic and/or recurring disorders spanning more than twelve months.

**Severity of Impairment.**—Severity was estimated for the subsample of participants who met criteria for a 12-month anxiety disorder. The Sheehan Disability Scale assesses the extent to which a disorder interferes with roles in four domains: 1) ability to clean, shop and take care of the home; 2) work; 3) ability to form and maintain close relationships; and 4) social life (Leon et al., 1997). Participants with anxiety disorder symptoms were asked to think about a month in the prior year when their symptoms were most severe, and then rate the extent to which their symptoms interfered with each role domain on a 0–10 scale. We classified disorders as “mild” if participants rated their interference as 0–3 in each domain, “moderate” if they rated interference as 4–6 in any domain, and “severe” if they rated interference as 7–10 in any domain (Levine et al., 2013).

**Functioning and Disability.**—The World Health Organization’s Disability Assessment Schedule II (WHO-DAS-II) assesses activity limitations and functioning in the 30 days prior to the interview (Rehm et al., 1999). Participants who reported their physical or mental health was “not excellent” or who affirmed their health had changed for the worst in the past year were administered WHO-DAS-II items from seven domains: 1) days out of role, 2) self-care, 3) mobility, 4) cognition, 5), social relationships, 6) productivity, and 7) family burden. Days out of role is the reported number of days in the prior 30 days when participants were unable to carry out their normal activities, scaled to 100. For the other 6 domains, disability scores are calculated as the number of days with disability multiplied by the severity of difficulty (mild, moderate, severe, extreme), then scaled from 0–100 with 100 representing the most severe disability (Levine et al., 2013). Participants who reported good health and no worsening of health in the past year were coded as having 0 disability. The WHO-DAS-II measures general disability nonspecific to psychiatric disorders. To determine the impact of anxiety disorders on functioning, we compared disability scores for participants who met the criteria for an anxiety disorder within the 12 months prior to the interview, more than 12 months prior to the interview, or at no time during their lifetime.

**Medical Comorbidity.**—Participants affirmed whether a doctor or health professional had ever told them they had the following conditions: arthritis, ulcers, cancer, high blood pressure, diabetes, liver problems, kidney problems, stroke, asthma, chronic lung disease, circulation problems, heart disease, HIV/AIDS, glaucoma, and osteoporosis. We counted the number of reported physical health conditions (0–14) and coded participants as having low (0–1), medium (2–3), and high (4 or more) comorbidity.

**Social Isolation.**—The NSAL also assessed 6 types of social isolation that are associated with poor mental health and psychiatric disorders among older Black adults (Taylor et al., 2020): isolation from neighbors, neighborhood groups, congregation, and family or friends;

living alone; and not being in a romantic relationship (Taylor et al., 2019). We coded participants as being isolated from neighbors if they reported getting together with neighbors a few times a year or less. Isolation from community groups was coded “yes” if participants reported not being involved with neighborhood groups such as book clubs, community associations, social clubs, and help groups. We coded participants as being isolated from members of a congregation if never attend religious services, or if they reported seeing, writing, or talking on the phone with members of their church only a few times a year or less. Similarly, we coded participants as being isolated from family or friends if they communicated with family or friends a few times a year or less. One item assessed if participants lived alone or with others. Finally, respondents who were unmarried and did not have a current romantic involvement were coded as “no romantic relationship.”

**Mental Health Service Utilization.**—Participants meeting lifetime criteria for an anxiety disorder were asked whether they had talked to a medical doctor or other professional about their fear/anxiety/panic/social fear/reaction to events. Those answering affirmatively were asked which professionals they had ever talked to. We investigated patterns of service use from mental health professionals (i.e., psychologist, psychiatrist, counselor or social worker in a mental health setting), medical professionals (i.e., family doctor, internal medicine, medical specialists, other healthcare providers), social services (e.g., social worker or counselor outside of mental health setting), complementary-alternative medicine providers (i.e., herbalist, chiropractor, spiritualist), and religious or spiritual providers.

**Participant Characteristics.**—The NSAL measured sociodemographic characteristics, including age (50–64, 65–74, 75 and older), employment status (employed, unemployed, out of the workforce), education (high school or less vs. more), marital status (married or cohabitating, widowed, separated or divorced, single), geographic region of the U.S. (northeast, south, Midwest, west), health insurance status (yes or no), and having a usual source of care. Low income was defined as living in a household with an annual income less than 138% of the Federal Poverty Level.

### Statistical Analysis

All statistical analyses were conducted in SAS (SAS Institute Inc., 2005), using design variables and survey weights to adjust for the complex sampling design of the NSAL. We first used cross-tabulations to estimate the lifetime and 12 month prevalence of DSM-IV anxiety disorders. We report weighted study proportions and their standard errors. Similar procedures were used to determine disorder persistence and severity in the subsamples meeting lifetime and 12-month disorder criteria, respectively. We calculated mean disability scores for Black men and women varying in the recency of their anxiety disorders, then used cross-tabulations to estimate the lifetime prevalence of mental health services use for those meeting criteria for a lifetime anxiety disorder. We then conducted three sets of multivariable analyses. First, we used multivariable logistic regressions to investigate gender differences in disorder prevalence for each lifetime and 12 month anxiety disorder. Second, we used sex-stratified multivariable linear regressions to test for differences in disability among those with an anxiety disorder in the 12 months prior to the interview, disorder more than 12 months prior to the interview, and no anxiety disorder. Finally, we used multivariable logistic

regressions to investigate gender differences in mental health services use. All multivariable analyses adjusted for participant age and ethnicity. Two-tailed p-values less than .05 were considered statistically significant.

## Results

### Sociodemographic Characteristics

There were some notable ethnic and gender differences in sociodemographic characteristics (Table 1). AAs were less likely than Black Caribbean's to be employed ( $p < .001$ ) or married ( $p = .01$ ), and less likely to report being isolated from neighborhood groups ( $p = .005$ ). However, there were no ethnic differences in the number of reported chronic health conditions, insurance status, poverty, or social isolation from the congregation, friends, family, or romantic partnerships ( $p$ 's  $> .05$ ). Black women were more likely than Black men, regardless of ethnicity, to be widowed and to live in poverty ( $p$ 's  $< .001$ ). They were also more likely to have a usual source of medical care ( $p < .001$ ), and to report two or more chronic health conditions ( $p = .006$ ). In addition, Black men were more likely than women to report significant isolation from neighborhood groups, congregations, and friends or family ( $p$ 's  $< .001$ ); but were also more likely to report being married or dating ( $p < .001$ ).

### Lifetime and 12-Month Prevalence of DSM-IV Anxiety Disorders

**Lifetime.**—More than one in six Black women and one in eight Black men met criteria for an anxiety disorder during their lifetime (Table 2; 18.3% and 12.4%). In models controlling for ethnicity and age, Black women were more likely than Black men to evidence a lifetime anxiety disorder (Odds Ratio [OR]=1.70). This was also true for GAD (OR=1.96), PTSD (OR=1.93), and panic disorder (OR=2.55).

**Past 12 Months.**—Approximately one in ten women and one in fifteen men met criteria for a recent (past 12 months) anxiety disorder (10.5% and 6.2%), with Black women more likely than Black men to experience any recent anxiety disorder (OR=1.89). For specific disorders, Black women were more likely than Black men to experience a recent panic disorder (OR=3.50).

### Persistence and Severity of 12-Month Anxiety Disorders

Anxiety disorders in older Black adults were of a persistent nature. About half of Black adults who met criteria for a lifetime anxiety disorder also met criteria in the 12 months prior to the interview, with varying rates of persistence by disorder (Table 3). For example, about two in three Black adults who met the criteria for lifetime panic disorder or social phobia also met criteria in the 12 months prior to the interview (67.6% and 61.2%, respectively). Just two in five Black adults who met criteria for lifetime PTSD (40.3%) or agoraphobia (41.1%) also met criteria in the 12 months prior to the interview.

Black adults meeting criteria for a 12-month anxiety disorder often experienced a severe disorder, defined as reporting severe levels of interference in home management, ability to work, relationships or social life. The majority of older Black adults with GAD or social

phobia experienced severe interference (85.7% and 60.2%, respectively), and almost half of those with PTSD (45.9%) or panic disorder (48.3%) experienced severe interference.

### **Functional Impairment Associated With Lifetime and 12-Month Anxiety Disorders**

Older Black men and women who met criteria for a lifetime anxiety disorder experienced more functional impairment than those without an anxiety disorder, with impairment greater for those meeting criteria in the 12 months prior to the interview (Table 4). In men, those who met criteria for a 12-month anxiety disorder experienced four times the number of days out of role as Black men who had never met criteria for an anxiety disorder (45.4% vs 10.7%). Having an anxiety disorder in the past 12 months, versus no history of anxiety disorder, was also associated with impairment in the domains of work productivity (27.3 vs 6.8 on 0–100 scale), family burden (21.1 vs 3.3), cognition (12.9 vs 0.7), and social relationships (6.7 vs 0.4). Similarly, women who met criteria for a 12-month anxiety disorder experienced more than three times the days out of role as Black women who had never met criteria for an anxiety disorder (29.0% vs 7.9%). Having a recent anxiety disorder was also associated with significantly greater impairment in the domains of family burden (20.4 vs 7.9, 0–100 scale), productivity (23.4 vs 6.3), mobility (19.5 vs 5.5), cognition (7.4 vs 0.7), and social relationships (3.0 vs 0.3).

### **Lifetime Use of Mental Health Services for Anxiety Disorders**

Two-thirds of older Black women reported seeing a professional for their anxiety symptoms, as compared to just one-half of Black men (65.2% vs 47.0%; Table 5). Among Black women, more than half had seen a medical provider (56.3%) and one-third a mental health specialist (37.8%). Among men, only one-third (38%) had seen a medical provider and one-third (32.5%) a mental health specialist.

## **Discussion**

Results of this study suggest that mental disorders in older Black populations, while not highly prevalent, are nevertheless highly burdensome when they do occur. This burden also differs substantially by gender. Overall, older Black women were more likely than similar Black men to report experiencing any anxiety disorder during their lifetime, such as PTSD, GAD, panic disorder, or agoraphobia. Concerning PTSD, Black women in general are more likely than Black men to experience traumas (e.g., childhood abuse, domestic violence, rape, sexual assault) that are associated with increased PTSD risk (Lacey et al., 2020; Valentine et al., 2019). Our findings suggest enduring consequences of these experiences. It behooves clinicians and those who develop anxiety disorder treatment approaches to be mindful of the importance of these differences. Low service utilization, as well, was a particular problem for both men and women. Innovative strategies will be needed to reach the undertreated among older Black adults. Our results also underscore the fact that social isolation, a concern for many older adults, is especially problematic for Black men and women who are widowed and living in poverty.

Findings here also underscore that anxiety disorders among older Black women and men are often characterized by a chronic or recurring course and severe life interference – a pattern

less marked in studies focused on younger Black adult populations. Indeed, we observed that the percent of aging Black adults who experienced a severe disorder (38.3%–85.7%, across measured disorders) was substantially higher than percentages reported in a prior study that included younger African Americans (16.1%–26.4%) and Caribbean Blacks (33.5%–69.9%) (Himle et al., 2009). The persistence of anxiety disorders, and the severity of interference in daily activities, are likely exacerbated by the undertreatment that we also observed in older Black men and women. Anxiety disorder severity and persistence are also worsened by underlying comorbidity with other mental health and substance use disorders. Prior research has found that one in four older African Americans with an anxiety disorder also meet criteria for mood disorders, such as depression (King-Kallimanis et al., 2009; Woodward et al., 2012). This comorbidity not only worsens the course of anxiety disorders, but also contributes to elevated risk for hypertension and other chronic health conditions that add to disability (Carroll et al., 2010).

We also discovered striking associations of anxiety with disability in the areas of social relationships, family burden, cognition, and, in women, mobility. The increased disability in social relationships was notable for men, who also experienced greater social isolation than Black women from almost all of the social relationships assessed including family and friends. Carden and colleagues (2021) in their study of older Black Americans and anxiety employ Carstensen's (1992) theory of Socioemotional Selectivity, which says that as individuals age, they focus more on positive information, become more selective in their relationships, pruning their social networks in favor of emotional relationships that are more satisfying as opposed to larger in numbers. It's possible this pruning in older Blacks may not be as useful an emotional regulator because of the disruptions they face based on structural challenges of racism, sexism, ageism, and the need for financial support and assistance, which greater instrumental support from others would help to buffer.

Issues of disability and impairment resonate at present when anxiety is heightened among older adults and Blacks of all ages due to COVID-19 and its resulting financial instability (Kotwal et al., 2021). Two million adult older workers stopped looking for work during COVID-19 due to caregiver responsibilities and other reasons (Marcus, 2021). An avenue for future research is to examine how anxiety disorders and associated comorbidities in aging Black adults precipitate early exits from the workforce and whether these exits could be stemmed by successfully treating anxiety disorders.

Finally, the observed gendered patterns of anxiety disorder prevalence, disability, and mental health service use have implications for health services planning. Given that Black women are more prone to PTSD than men and women from other racial/ethnic groups, there is likely demand for providing trauma-informed health care (Sweeney et al., 2018). Recommending trauma-informed mental health services for PTSD is not new, but results from this study hint that barriers of mobility, disability, and impairment will also challenge older Black women. Novel treatment approaches might include the use of patient navigators, in-home visits, or tele-mental health, which has demonstrated promise in working for some patients during COVID-19. Such approaches could involve family or caregivers to address social relationship disruptions.



## Limitations

Our findings are best considered in light of several study limitations. Because the sampling frame was based on household residence, prevalence estimates do not generalize to older Black men and women who may be homeless or institutionalized. Given the relatively small sample size, especially for 12-month anxiety disorders, we were prevented from generating stable estimates of gender differences for individual disorders. In addition, we were unable to estimate ethnic differences (African American vs. Caribbean Black) in severity, impairment, and treatment of anxiety disorders within older Black men and women. In studies of younger populations, ethnic and nativity differences in the chronicity and treatment of mental health disorders have been observed (Jones et al., 2020; Mays et al., 2018) and are likely to be true in older ages as well. Future studies of mental health and aging would benefit from a longitudinal design and larger samples to better elucidate the health service needs of African American and Caribbean Black men and women across the lifespan.

## Conclusions

Our findings offer new insights into the substantial disabilities associated with anxiety disorders in middle age and older Black men and women. Addressing treatment needs associated with these more serious anxiety disorders will not be easy nor swift because many Black Americans experience significant barriers to accessing mental health care and treatment. For instance, lack of health insurance (particularly due to unemployment and underemployment) and out-of-pocket costs make mental health treatments unaffordable for many (Sorkin et al., 2016; Weissman et al., 2018). Despite the benefits of Medicare after age 65, older Black Americans still face significant barriers to access culturally specific methods of treatments and preferred race concordant providers (Alang, 2019). Even during COVID-19-related treatment modality changes, Black Americans were less likely to utilize telehealth treatments (Chunara et al., 2021). While attention to these structural and provider behaviors and characteristics are necessary steps towards improving mental health service utilization in Black older adults, there are other necessary steps as well, such as improving mental health treatment for Black Americans in general.

As others have noted, there is a critical need to develop clinical treatment approaches that address the specific needs of Black Americans (Jones et al., 2020; Mays et al., 2018; Williams et al., 2014). For instance, the nature of family conflict within Black families, social isolation patterns, or the emotional consequences of a sex ratio imbalance where older Black women are far less likely than Black men to be in marriage-like relationships are often not addressed in empirically developed manualized psychosocial treatment for anxiety (Craske et al., 2006; Himle et al., 2019). Carter and colleagues have long called for the field of anxiety disorder treatment to address the lower efficacy of current treatment practices with African Americans (Carter et al., 2012; Carter & Sbrocco, 2018; Carter et al., 1996). While the cognitive model of anxiety is likely accurate in framing treatment approaches with African Americans, it is also true that ethnic identity and culture play critical roles in shaping patients' sense of threat, fueling a somewhat different experience of anxiety or its triggers (Kelly et al., 2020; Neal & Turner, 1991; Watson et al., 2020). As Carter and Sbrocco (2018) note: "what one (Blacks) learns to fear, how one interprets symptoms

and where he or she seeks treatment are inextricably linked to the concept of ethnicity”. They underscore, first, that treatments include awareness of ethnic racism and the ways that it colors perceived threat. Second, treatments can benefit from recognizing comorbidities as potential complicating factors in care. Third, stigma impacts Black Americans ability to seek and/or stay in treatment and/or their willingness to disclose experiences that may be mental health related. In sum, mental health treatments that do not take into account racial stressors, differences in societal relations, and racial/ethnic beliefs likely contribute to reduced efficacy of traditional anxiety therapies (Mays et al., 2017). Fortunately, there are a growing number of race specific approaches developed by Black clinicians (Bell-Tolliver et al., 2009; Graham, 2005; Neal-Barnett et al., 2011).

Data has documented for decades that the mental health disorders of Black Americans are plagued by persistence and high burden. Given the aftermath that COVID has left in Black America, it is a fitting time to try harder to identify efficacious care strategies for older Black Americans.

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**Table 1.**  
Demographic Characteristics of Black adults age 50 and older

| Demographic Characteristic           | AA (n=1135)    |     | CB (n=426) |      | p-value <sup>2</sup> | Men (n=603) |     | Women (n=958) |     | p-value |
|--------------------------------------|----------------|-----|------------|------|----------------------|-------------|-----|---------------|-----|---------|
|                                      | % <sup>1</sup> | SE  | %          | SE   |                      | %           | SE  | %             | SE  |         |
| Age                                  |                |     |            |      | .99                  |             |     |               |     | .35     |
| 50–64                                | 61.5           | 1.5 | 61.4       | 6.5  |                      | 64.0        | 1.9 | 59.6          | 2.3 |         |
| 65–74                                | 26.4           | 1.6 | 26.4       | 4.1  |                      | 24.9        | 1.7 | 27.7          | 2.4 |         |
| 75 and older                         | 12.1           | 1.2 | 12.2       | 3.9  |                      | 11.2        | 1.5 | 12.8          | 1.5 |         |
| Employment                           |                |     |            |      | <.001                |             |     |               |     | .13     |
| Employed                             | 44.8           | 2.2 | 61.8       | 3.6  |                      | 50.0        | 3.0 | 42.7          | 2.6 |         |
| Unemployed                           | 5.1            | 0.6 | 3.2        | 0.7  |                      | 4.1         | 0.9 | 5.6           | 1.0 |         |
| Out of workforce                     | 50.1           | 2.3 | 35.0       | 3.5  |                      | 45.9        | 2.9 | 51.6          | 3.0 |         |
| Greater than high school education   | 32.7           | 1.9 | 39.9       | 4.1  | .11                  | 36.1        | 2.7 | 30.9          | 2.6 | .19     |
| Marital Status                       |                |     |            |      | .01                  |             |     |               |     | p<.001  |
| Married/cohabitating                 | 43.2           | 1.7 | 58.6       | 6.2  |                      | 59.5        | 2.2 | 32.4          | 2.1 |         |
| Widowed                              | 24.4           | 1.2 | 15.5       | 2.8  |                      | 8.6         | 1.4 | 35.6          | 2.0 |         |
| Separated/divorced                   | 24.4           | 1.6 | 20.5       | 4.5  |                      | 23.8        | 1.9 | 24.4          | 2.1 |         |
| Never married                        | 8.0            | 1.0 | 5.5        | 1.1  |                      | 8.1         | 1.2 | 7.7           | 1.1 |         |
| Chronic medical conditions           |                |     |            |      | .27                  |             |     |               |     | .006    |
| 0–1                                  | 41.8           | 1.8 | 51.2       | 7.2  |                      | 48.1        | 3.1 | 37.9          | 1.9 |         |
| 2–3                                  | 38.9           | 1.6 | 35.1       | 6.6  |                      | 35.9        | 2.7 | 40.8          | 1.9 |         |
| 4+                                   | 19.3           | 1.3 | 13.7       | 3.1  |                      | 16.0        | 1.9 | 21.3          | 1.4 |         |
| Region                               |                |     |            |      | <.001                |             |     |               |     | .43     |
| Northeast                            | 15.2           | 2.0 | 53.6       | 8.2  |                      | 16.1        | 2.1 | 18.7          | 2.2 |         |
| Midwest                              | 19.1           | 1.7 | 5.3        | 2.8  |                      | 17.5        | 2.6 | 18.9          | 2.8 |         |
| South                                | 56.4           | 3.1 | 28.6       | 10.4 |                      | 55.9        | 3.6 | 53.8          | 3.1 |         |
| West                                 | 9.2            | 2.2 | 12.6       | 12.6 |                      | 10.6        | 2.6 | 8.6           | 2.2 |         |
| Insured                              | 87.5           | 1.3 | 91.0       | 1.8  | .15                  | 88.2        | 1.7 | 87.4          | 1.7 | .71     |
| Has usual source of care             | 93.1           | 1.0 | 94.6       | 1.9  | .51                  | 89.4        | 1.8 | 96.1          | 0.9 | <.001   |
| Income below 138% FPL                | 33.8           | 2.0 | 27.2       | 4.1  | .17                  | 26.7        | 2.9 | 38.6          | 2.2 | <.001   |
| Social isolation <sup>3</sup>        |                |     |            |      |                      |             |     |               |     |         |
| Neighbors                            | 44.0           | 1.8 | 37.4       | 5.7  | .29                  | 43.3        | 2.6 | 43.8          | 2.3 | .90     |
| Neighborhood groups                  | 26.5           | 1.7 | 37.1       | 3.5  | .005                 | 32.7        | 2.8 | 22.9          | 1.7 | <.001   |
| Congregation                         | 21.9           | 1.5 | 22.2       | 3.4  | .93                  | 31.7        | 2.7 | 15.1          | 1.3 | <.001   |
| Family or friends                    | 11.6           | 1.2 | 9.5        | 3.1  | .55                  | 16.3        | 2.2 | 7.8           | 1.3 | <.001   |
| Lives alone                          | 31.7           | 1.5 | 26.4       | 2.4  | .07                  | 29.0        | 2.3 | 33.1          | 1.6 | .13     |
| Not married/dating                   | 43.8           | 1.9 | 33.3       | 4.9  | .06                  | 27.7        | 2.2 | 55.0          | 2.2 | <.001   |
| Count of social isolation indicators |                |     |            |      | .58                  |             |     |               |     | .38     |
| 0 or 1                               | 43.3           | 1.8 | 47.8       | 4.1  |                      | 45.3        | 2.4 | 42.3          | 2.2 |         |
| 2                                    | 31.5           | 1.5 | 31.1       | 3.7  |                      | 29.1        | 2.2 | 33.3          | 1.8 |         |
| 3+                                   | 25.2           | 1.4 | 21.1       | 4.7  |                      | 25.6        | 2.1 | 24.4          | 1.8 |         |

Abbreviations: FPL = federal poverty level; SE = standard error

<sup>1</sup>Survey-weighted percent

<sup>2</sup>p-values from Rao-Scott test, a version of  $X^2$  that accounts for the complex sampling design and survey weights

<sup>3</sup>Column percentages do not add to 100%.

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**Table 2.**

Prevalence of DSM-IV anxiety disorders among older Black men and women

| Lifetime                       | Men            |     | Women |     | OR <sup>2</sup> | CI        |
|--------------------------------|----------------|-----|-------|-----|-----------------|-----------|
|                                | % <sup>1</sup> | SE  | %     | SE  |                 |           |
| Generalized Anxiety Disorder   | 2.6            | 0.7 | 4.7   | 0.8 | 1.96            | 1.05–3.68 |
| Post-Traumatic Stress Disorder | 5.1            | 1.4 | 8.7   | 1.1 | 1.93            | 1.04–3.60 |
| Agoraphobia                    | 2.3            | 1.0 | 2.9   | 0.8 | 1.35            | 0.60–3.01 |
| Panic Disorder                 | 1.2            | 0.4 | 2.9   | 0.8 | 2.55            | 1.05–6.19 |
| Social Phobia                  | 6.3            | 1.5 | 6.3   | 0.9 | 1.06            | 0.63–1.77 |
| Any Anxiety Disorder           | 12.4           | 2.0 | 18.3  | 1.4 | 1.70            | 1.20–2.39 |

  

| 12 Month                       | Men            |     | Women |     | OR <sup>2</sup> | CI        |
|--------------------------------|----------------|-----|-------|-----|-----------------|-----------|
|                                | % <sup>1</sup> | SE  | %     | SE  |                 |           |
| Generalized Anxiety Disorder   | 1.5            | 0.6 | 2.3   | 0.5 | 1.71            | 0.72–4.08 |
| Post-Traumatic Stress Disorder | 2.6            | 1.1 | 2.9   | 0.6 | 1.12            | 0.45–2.96 |
| Agoraphobia                    | 0.8            | 0.5 | 1.5   | 0.4 | 2.04            | 0.57–7.33 |
| Panic Disorder                 | 0.7            | 0.2 | 2.1   | 0.7 | 3.50            | 1.24–9.83 |
| Social Phobia                  | 3.4            | 1.1 | 4.3   | 0.8 | 1.33            | 0.69–2.58 |
| Any Anxiety Disorder           | 6.2            | 1.3 | 10.5  | 1.3 | 1.89            | 1.19–2.92 |

Abbreviations: DSM IV = Diagnostic and Statistical Manual of Mental Disorders, 4th edition; SE = Standard Error

<sup>1</sup>Survey-weighted percent<sup>2</sup>Odds ratio obtained from logistic regression, run separately for each type of disorder, that controls for age and ethnicity, includes survey weights, and accounts for the complex sampling design.



**Table 3.**

Persistence and severity of DSM-IV anxiety disorders among older Black men and women

|                          | Generalized Anxiety Disorder |     | Post-Traumatic Stress Disorder |     | Agoraphobia |      | Panic Disorder |     | Social Phobia |     |
|--------------------------|------------------------------|-----|--------------------------------|-----|-------------|------|----------------|-----|---------------|-----|
|                          | % <sup>1</sup>               | SE  | %                              | SE  | %           | SE   | %              | SE  | %             | SE  |
| Persistence <sup>2</sup> | 53.6                         | 5.0 | 40.3                           | 3.7 | 41.1        | 10.0 | 67.6           | 2.6 | 61.2          | 5.5 |
| Severity <sup>3</sup>    |                              |     |                                |     |             |      |                |     |               |     |
| Mild                     | 8.7                          | 1.0 | 38.3                           | -   | 16.0        | 2.6  | 23.0           | 1.0 | 1.4           | 0.7 |
| Moderate                 | 5.6                          | 0.7 | 15.7                           | -   | 45.6        | 21.5 | 2.7            | 4.0 | 38.4          | 6.2 |
| Severe                   | 85.7                         | 1.7 | 45.9                           | -   | 38.3        | 18.9 | 48.3           | 4.9 | 60.2          | 6.1 |

Abbreviations: DSM IV = Diagnostic and Statistical Manual of Mental Disorders, 4th edition;

<sup>1</sup>Survey-weighted percent<sup>2</sup>The percentage of Black adults with a lifetime anxiety disorder that continued to meet DSM-IV criteria in the 12 months prior to the interview. Analyses were limited to Black adults whose age of disorder onset was more than 2 years prior to the interview.<sup>3</sup>Sheehan Disability Scale. Severity of disability was assessed for Black adults who met DSM-IV criteria in the 12 months prior to the interview.

**Table 4.**

Functional impairment associated with DSM-IV lifetime and 12-month anxiety disorders in older Black men and women

| Men                                  | Recency of Anxiety Disorder <sup>1</sup> |     |                                  |     |   |     | Adj. Difference in Impairment    |                                  |
|--------------------------------------|--|-----|----------------------------------|-----|---|-----|----------------------------------|----------------------------------|
|                                      | No lifetime anxiety disorder (n=512)     |     | Lifetime anxiety disorder (n=33) |     | Anxiety disorder in past 12 months (n=31) |     | Lifetime vs. no anxiety disorder | 12 month vs. no anxiety disorder |
|                                      | Mean <sup>3</sup>                        | SE  | Mean                             | SE  | Mean                                      | SE  | Difference <sup>4</sup>          | Difference                       |
| <b>WHO-DAS II Domain<sup>2</sup></b> |  |     |                                  |     |   |     |                                  |                                  |
| Days out of Role                     | 10.7                                     | 1.9 | 16.0                             | 2.8 | 45.4                                      | 6.4 | 5.0                              | 33.8***                          |
| Self-Care                            | 1.2                                      | 0.5 | 6.7                              | 2.3 | 4.0                                       | 2.9 | 5.5                              | 2.7                              |
| Mobility                             | 5.3                                      | 0.9 | 9.2                              | 2.1 | 4.0                                       | 2.9 | 4.1                              | 7.9                              |
| Cognition                            | 0.7                                      | 0.3 | 8.1                              | 2.3 | 12.9                                      | 3.2 | 7.3*                             | 7.5*                             |
| Social                               | 0.4                                      | 0.2 | 1.7                              | 0.7 | 6.7                                       | 1.9 | 1.3                              | 6.4*                             |
| Productivity                         | 6.8                                      | 1.0 | 9.3                              | 1.3 | 27.3                                      | 3.4 | 2.3                              | 20.2***                          |
| Family Burden                        | 3.3                                      | 0.9 | 11.8                             | 2.3 | 21.1                                      | 4.2 | 8.5                              | 17.8**                           |
|                                      | Recency of Anxiety Disorder              |     |                                  |     |   |     | Adj. Difference in Impairment    |                                  |
| Women                                | No lifetime anxiety disorder (n=760)     |     | Lifetime anxiety disorder (n=74) |     | Anxiety disorder in past 12 months (n=79) |     | Lifetime vs. no anxiety disorder | 12 month vs. no anxiety disorder |
| WHO-DAS II Domain                    | Mean <sup>1</sup>                        | SE  | Mean                             | SE  | Mean                                      | SE  | Difference <sup>2</sup>          | Difference                       |
| Days out of Role                     | 7.9                                      | 1.1 | 14.3                             | 2.8 | 29.0                                      | 4.7 | 5.4                              | 20.1***                          |
| Self-Care                            | 1.0                                      | 0.2 | 1.0                              | 0.8 | 2.4                                       | 0.4 | 0.3                              | 1.6                              |
| Mobility                             | 5.5                                      | 0.7 | 5.0                              | 1.5 | 19.5                                      | 1.6 | -1                               | 14.3***                          |
| Cognition                            | 0.7                                      | 0.2 | 1.7                              | 0.8 | 7.4                                       | 1.6 | 1.0                              | 9.3**                            |
| Social                               | 0.3                                      | 0.1 | 0.5                              | 0.2 | 3.0                                       | 0.8 | 0.1                              | 2.6*                             |
| Productivity                         | 6.3                                      | 0.7 | 11.8                             | 2.2 | 23.4                                      | 2.1 | 4.9                              | 16.5***                          |
| Family Burden                        | 7.9                                      | 1.1 | 6.5                              | 2.0 | 20.4                                      | 3.0 | 1.7                              | 15.6***                          |

\* p < .05,

\*\* p < .01,

\*\*\* p < .001

<sup>1</sup> DSM-IV anxiety disorders included generalized anxiety disorder, post-traumatic stress disorder, agoraphobia, panic disorder, and social phobia. All participants who met DSM-IV criteria for an anxiety disorders in the 12 months prior to the interview were categorized as “past 12 months”. Those who met DSM-IV criteria for an anxiety disorder during the lifetime, but not in the 12 months prior to the interview, were coded as “lifetime”.

<sup>2</sup> Functional impairment assessed with the World Health Organization-Disability Assessment Schedule Version 2.0 (WHO-DAS II). Scores range from 0–100, with higher scores indicating more severe impairment.

<sup>3</sup> Mean estimates are weighted to be nationally representative of Black adults in the United States, age 50 and older.

<sup>4</sup>Adjusted mean difference in impairment for participants who met DSM-IV criteria for an anxiety disorder during the lifetime, compared to those who never met anxiety disorder criteria. The difference estimates were obtained from linear regression models, run separately for each type of impairment, that control for age and gender, includes survey weights, and accounts for the complex sampling design.

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**Table 5.**

Mental health services use among older Black adults with a DSM-IV anxiety disorder

| Type of provider   | Men            |     | Women |     | OR <sup>2</sup> | 95% CI     |
|--|----------------|-----|-------|-----|-----------------|------------|
|  | % <sup>1</sup> | SE  | %     | SE  |                 |            |
| Psychiatrist, psychologist, other mental health provider     | 32.5           | 6.6 | 37.8  | 6.6 | 1.39            | 0.64–3.02  |
| Family doctor, medical specialist, other health professional | 37.7           | 6.9 | 56.3  | 5.7 | 2.15            | 0.96–4.83  |
| Complementary alternative medicine provider                  | 2.1            | 2.0 | 2.4   | 1.3 | 1.08            | 0.10–11.59 |
| Religious/spiritual advisor                                  | 21.7           | 5.2 | 33.7  | 4.1 | 1.73            | 0.75–3.98  |
| Any mental health service provider                           | 47.0           | 7.8 | 65.2  | 6.4 | 2.14            | 0.83–5.52  |

Abbreviations: DSM IV = Diagnostic and Statistical Manual of Mental Disorders, 4th edition; SE = Standard Error

<sup>1</sup>Survey-weighted percent<sup>2</sup>Odds ratio obtained from multivariable logistic regression, run separately for each type of provider, that controls for age and ethnicity, includes survey weights, and accounts for the complex sampling design.