



Original Contribution

Is the Black-White Mental Health Paradox Consistent Across Gender and Psychiatric Disorders?

Christy L. Erving*, Courtney S. Thomas, and Cleothia Frazier

* Correspondence to Dr. Christy L. Erving, Department of Sociology, Vanderbilt University, 2301 Vanderbilt Place, PMB 351811, Nashville, TN 37235-1811 (e-mail: christy.l.erving@vanderbilt.edu).

Initially submitted March 5, 2018; accepted for publication September 25, 2018.

This study assessed whether the black-white mental health epidemiologic paradox (i.e., blacks' lower or similar rates of mental disorder relative to whites) extends across 12 lifetime and past-year psychiatric disorders and whether it varies with gender. We used data from the National Comorbidity Survey Replication and the National Survey of American Life, 2001–2003 ($n = 4,584$ black and 6,668 non-Hispanic white persons). Results showed overwhelming evidence of the paradox across lifetime and past-year disorders for women and men. In addition, blacks' mental health advantage over whites widened after adjusting for socioeconomic factors. There was one exception: Black women experienced higher risk of lifetime posttraumatic stress disorder compared with white women. These findings provide strong evidence for the "black-white mental health paradox"; however, additional research is needed to understand black women's heightened risk for posttraumatic stress disorder.

gender; mental disorders; National Comorbidity Survey Replication; National Survey of American Life; race/ethnicity

Abbreviations: CI, confidence interval; GAD, generalized anxiety disorder; MDD, major depressive disorder; NCS-R, National Comorbidity Survey Replication; NSAL, National Survey of American Life; OR, odds ratio; PTSD, posttraumatic stress disorder; SES, socioeconomic status.

A growing body of epidemiologic research demonstrates a "black-white mental health paradox." Despite higher stress exposure, greater material hardship, and worse physical health, black Americans tend to experience similar or relatively lower rates of psychiatric disorders than whites (1–9). Potential substantive (e.g., racial differences in psychosocial resources or health behaviors) and artifactual (e.g., racial differences in reporting of symptoms) explanations have been evaluated in prior research (1, 4, 5, 7, 8). Yet, with limited evidence that these mechanisms account for the paradox, recent studies have turned to more fundamental issues, identifying several challenges of the paradox literature that have contributed to our limited knowledge of these unexpected patterns.

Critical among these issues is the limited range of outcomes assessed in research on black-white differences in psychiatric disorders. With blacks' mental health advantage especially pronounced for major depression (10), paradox studies have primarily focused on this outcome (1, 11–17). While some have examined multiple psychiatric disorders, these investigations

have been limited in their scope and in the range of psychiatric disorders considered. In addition, several of these studies have yielded evidence counter to the paradox (3, 15, 18, 19). For example, Breslau et al. (18) reported higher prevalence of lifetime bipolar disorder among blacks than among whites. Such findings raised the possibility that the race paradox in mental health might be disorder-specific and underscored the need to assess multiple disorders.

In addition to a restricted number of outcomes, previous paradox studies often limited their attention to lifetime psychiatric disorders (1, 6, 15, 18, 20, 21). However, it is important to assess the prevalence of both lifetime and past-year diagnoses, as they might differentially reflect the incidence and duration of psychiatric disorders. Whereas lifetime estimates indicate the incidence of past and current disorders, past-year rates capture more recent issues. Consequently, they might disproportionately represent more enduring conditions (10, 17). For instance, given that mental health problems often persist without intervention, groups with limited access to treatment might develop more long-lasting

cases that inflate past-year rates (3, 10, 17). As such, some have suggested that racial differences in past-year prevalence might be attenuated relative to lifetime estimates (10, 20). Yet, given that only a handful of studies have examined past-year diagnoses (7, 8, 11) with even fewer comparing lifetime and past-year prevalence rates (3, 9, 12, 19, 22, 23), the extent to which racial differences in mental health varies across lifetime versus past-year prevalence rates is unclear. To date, only 3 studies have addressed both of these challenges (3, 9, 19). Most recently, Gibbs et al. (3) assessed black-white differences in past-year and lifetime prevalence rates across multiple psychiatric disorders (3, 9, 19). In one of the most comprehensive examinations of the paradox to date, the researchers observed a mental health advantage among blacks relative to whites for most—but not all—psychiatric disorders, demonstrating the value of more comprehensive assessments of mental health for understanding the paradox.

A second limitation of the paradox literature is that few studies have examined the extent to which racial patterns in mental health are gendered. In fact, most have simply controlled for sex (3, 4, 7, 8, 14–16, 18, 19, 21–23), despite prior research documenting distinct mental health patterns among women and men. Studies have suggested that these patterns might arise from variations in socialization patterns, such that the higher rates of internalizing disorders (e.g., major depression) among women might arise from their endorsement of traditionally feminine qualities (e.g., sensitivity to others' needs), whereas engaging in hyper-masculine behaviors might account for a greater prevalence of externalizing disorders (e.g., substance use) among men (24–27). At the same time, scholars have increasingly recognized both race and gender as central dimensions of stratification that jointly and independently distinguish the mental health of women, men, blacks, and whites (24, 25), positing that black-white differences in gender socialization and norms might contribute to additional distinctions in mental health outcomes among women and men. For example, while studies note that black and white women generally perceive sensitivity to the needs of others as a central feminine characteristic (24, 25), femininity for black women also tends to center around self-sufficiency and inner strength (25, 26), which might be protective for mental health. Such racialized gender norms might lead to a greater distinction in the mental health profiles of black and white women, while differences among black and white men might be less pronounced.

Despite limited consideration in prior research, some evidence suggests that gender might importantly influence the race paradox in mental health. Using National Comorbidity Survey data, Breslau et al. (20) reported racial differences in anxiety disorder among men but not among women. These findings suggest that gender might condition racial inequalities in mental health and raise the possibility that these gendered racial patterns might also be disorder-specific. However, because Breslau et al. assessed only broad disorder categories (e.g., mood, anxiety, substance), any potential gender- and disorder-specific patterns in the paradox might have been obscured.

More recently, Barnes et al. (1) found that racial differences in major depression were consistent among women and men. In another study, Rosenfield (25) examined the interactive relationships linking race and gender to mental health in the National Comorbidity Survey, reporting distinct gendered patterns in the paradox for 2 outcomes: lifetime prevalence of major depression

and antisocial problems. Results indicated a higher prevalence of major depression among white women compared with black women, whereas black men had lower rates of antisocial problems than white men. Although these findings have provided some insights into how gender might condition black-white patterns in mental health, they are limited by the narrow range of outcomes considered.

Taken together, the research challenges outlined here underscore the need to clarify the paradox (i.e., blacks' similar and/or lower rates of mental disorder vis-à-vis whites). To address these limitations, we had 3 main objectives: 1) to examine racial differences in multiple psychiatric disorders; 2) to evaluate the extent to which these patterns are observed for both past-year and lifetime diagnoses; and 3) to assess whether racial differences in psychiatric disorders differ among women and men. By addressing these fundamental issues collectively, the present study fills several gaps in knowledge and enhances understanding of the epidemiologic patterning of the race paradox in mental health.

METHODS

Data were from the National Comorbidity Survey Replication (NCS-R) and the National Survey of American Life (NSAL), collected between 2001 and 2003. The NCS-R survey population included adults age 18 years or older residing in households in the coterminous United States, with a sample of 6,696 whites and 1,176 African Americans. Interviews were conducted in English and lasted an average of 2 hours, with a 71% response rate (28). The NSAL sampled African Americans ($n = 3,570$), blacks of Caribbean descent ($n = 1,621$), and non-Hispanic whites ($n = 891$) (29). The overall response rate was 72.3%. Most interviews (86%) were conducted face-to-face, with race/ethnicity matching of interviewers, and respondents used a computer-assisted instrument. For this analysis, we include only the sample of African American-identified individuals in the NSAL data.

Consistent with prior paradox research (1), NCS-R and NSAL data were merged to create a large, nationally representative sample of African Americans (from NSAL, NCS-R) and non-Hispanic whites (from NCS-R). After conducting list-wise deletion, the restricted sample examined in the present study included 4,584 African Americans and 6,668 non-Hispanic whites.

Measures

Dependent measures. We evaluated past-year and lifetime estimates for 12 psychiatric disorders: major depressive disorder (MDD), dysthymic disorder, bipolar disorders 1 and 2, agoraphobia, panic disorder, social phobia, generalized anxiety disorder (GAD), posttraumatic stress disorder (PTSD), alcohol abuse, alcohol dependence, drug abuse, and drug dependence. The World Mental Health Survey Initiative version of the World Mental Health Composite International Diagnostic Interview (WMH-CIDI) was used to assess psychiatric disorders. This instrument assesses the most common and severe mental disorders using diagnostic criteria established by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (30). Following previous research (18, 20, 21), we also included 4 composite measures of mental disorder: any mood disorder, any anxiety disorder, any substance-use disorder, and any mental disorder.

Independent measures and controls. Respondents included in the analysis self-identified as non-Hispanic African American ($n = 4,584$) or non-Hispanic white ($n = 6,668$). Respondents self-identified either as a woman ($n = 6,531$) or man ($n = 4,721$). Sociodemographic controls included age (18–29 years, 30–44 years, 45 years or older); educational attainment (less than high school, high school education/some college, and college degree); and employment status (employed, unemployed, not in the labor force).

Analysis

Table 1 includes descriptive statistics for black-white patterns of mental health. Table 2 presents results of logistic regression analysis to assess black-white differences in each disorder. The first model (crude) includes only the race covariate, while the second model adjusted for gender, age, education, and employment status to ensure that observed racial patterns in mental health were not due to group differences in these covariates. Next, we fitted gender-stratified models to assess the extent to which black-white patterns in mental disorder differ among women and men (Tables 3 and 4). Due to the data's complex sampling strategy, survey procedures were used to correct for unequal probabilities of selection, nonresponse, and design effects in the sample. All analyses were performed with Stata, version 14.2 (StataCorp LLC, College Station, Texas).

RESULTS

Descriptive results

Table 1 reports the weighted past-year and lifetime prevalence rates of mental disorders by race. Descriptive statistics for the study controls are available in Web Table 1 (available at <https://academic.oup.com/aje>).

Estimated prevalence rates of past-year and lifetime mental disorders according to race were generally consistent with the paradox: lower or similar rates of mental disorder for blacks in comparison with whites. For past-year disorders, blacks experienced lower rates of MDD, any mood disorder, social phobia, GAD, any anxiety disorder, and any mental disorder relative to whites. Blacks and whites experienced similar rates for dysthymic disorder, bipolar disorders 1 and 2, panic disorder, PTSD, alcohol abuse/dependence, drug abuse/dependence, and any substance-use disorder. However, blacks had significantly higher rates of agoraphobia (2%) relative to whites (1%). The weighted lifetime prevalence rates show that blacks reported lower rates of the following 9 mental disorders compared with whites: MDD, any mood disorder, panic disorder, social phobia, GAD, any anxiety disorder, alcohol dependence, any substance-use disorder, and any mental disorder. Blacks and whites had similar rates for the remaining 6 lifetime disorders. However, blacks experienced higher rates of lifetime PTSD (9%) compared with their white counterparts (7%).

Regression analysis

Full sample. Estimated odds ratios presented in Table 2 show black-white differences in the prevalence of each past-year and lifetime psychiatric disorder. For past-year disorders, blacks

Table 1. Prevalence of Past-Year and Lifetime Mental Disorders According to Race ($n = 11,252$)^a, National Survey of American Life and National Comorbidity Survey Replication, United States, 2001–2003

| Psychiatric Disorder | Race/Ethnicity | |
|--|--------------------------|--------------------------|
| | Black ($n = 4,584$) | White ($n = 6,668$) |
| Past-year disorders | | |
| Major depression ^b | 0.05 | 0.07 |
| Dysthymic disorder | 0.01 | 0.02 |
| Bipolar disorders 1 and 2 | 0.01 | 0.01 |
| Any mood disorder ^b | 0.07 | 0.08 |
| Agoraphobia ^b | 0.02 | 0.01 |
| Panic disorder | 0.02 | 0.03 |
| Social phobia ^b | 0.05 | 0.07 |
| Generalized anxiety disorder ^b | 0.01 | 0.03 |
| Posttraumatic stress disorder | 0.04 | 0.03 |
| Any anxiety disorder ^b | 0.11 | 0.13 |
| Alcohol abuse | 0.01 | 0.01 |
| Alcohol dependence | 0.01 | 0.01 |
| Drug abuse | 0.01 | 0.01 |
| Drug dependence | 0.007 | 0.004 |
| Any substance-use disorder | 0.03 | 0.03 |
| Any mental disorder ^b | 0.16 | 0.19 |
| Lifetime disorders | | |
| Major depression ^b | 0.10 | 0.18 |
| Dysthymic disorder | 0.02 | 0.03 |
| Bipolar disorders 1 and 2 | 0.02 | 0.02 |
| Any mood disorder ^b | 0.12 | 0.20 |
| Agoraphobia | 0.03 | 0.02 |
| Panic disorder ^b | 0.03 | 0.05 |
| Social phobia ^b | 0.08 | 0.12 |
| Generalized anxiety disorder ^b | 0.05 | 0.08 |
| Posttraumatic stress disorder ^b | 0.09 | 0.07 |
| Any anxiety disorder ^b | 0.19 | 0.23 |
| Alcohol abuse | 0.06 | 0.07 |
| Alcohol dependence ^b | 0.03 | 0.05 |
| Drug abuse | 0.06 | 0.07 |
| Drug dependence | 0.02 | 0.03 |
| Any substance-use disorder ^b | 0.11 | 0.13 |
| Any mental disorder ^b | 0.31 | 0.37 |

^a Proportions are presented.

^b Indicates significant ($P < 0.05$) difference between black persons and white persons.

experienced significantly lower odds of 6 conditions and similar odds of 9 conditions relative to whites. However, blacks had 56% higher odds of agoraphobia (odds ratio (OR) = 1.56, 95% confidence interval (CI): 1.14, 2.15). After adjusting for gender, age, education, and employment status, blacks had significantly lower odds of 8 past-year disorders and similar odds

Table 2. Black-White Odds Ratios^a for Past-Year and Lifetime Disorders, National Survey of American Life and National Comorbidity Survey Replication, United States, 2001–2003

| Psychiatric Disorder | Crude OR | 95% CI | Adjusted OR ^b | 95% CI |
|-------------------------------|-------------------|------------|--------------------------|------------|
| Past-year disorders | | | | |
| Major depression | 0.76 ^c | 0.63, 0.90 | 0.67 ^d | 0.56, 0.80 |
| Dysthymic disorder | 0.89 | 0.58, 1.38 | 0.81 | 0.52, 1.26 |
| Bipolar disorders 1 and 2 | 1.02 | 0.67, 1.55 | 0.82 | 0.53, 1.28 |
| Any mood disorder | 0.78 ^c | 0.67, 0.92 | 0.68 ^d | 0.58, 0.79 |
| Agoraphobia | 1.56 ^c | 1.14, 2.15 | 1.30 | 0.92, 1.85 |
| Panic disorder | 0.92 | 0.70, 1.21 | 0.82 | 0.63, 1.07 |
| Social phobia | 0.73 ^c | 0.61, 0.88 | 0.64 ^d | 0.52, 0.79 |
| Generalized anxiety disorder | 0.47 ^d | 0.35, 0.64 | 0.44 ^d | 0.32, 0.61 |
| Posttraumatic stress disorder | 1.08 | 0.86, 1.35 | 0.99 | 0.79, 1.24 |
| Any anxiety disorder | 0.81 ^c | 0.71, 0.94 | 0.73 ^d | 0.63, 0.85 |
| Alcohol abuse | 0.76 | 0.50, 1.18 | 0.64 ^e | 0.43, 0.98 |
| Alcohol dependence | 0.94 | 0.59, 1.52 | 0.81 | 0.51, 1.29 |
| Drug abuse | 0.81 | 0.43, 1.50 | 0.70 | 0.37, 1.30 |
| Drug dependence | 1.60 | 0.80, 3.22 | 1.19 | 0.59, 2.41 |
| Any substance-use disorder | 0.85 | 0.62, 1.18 | 0.71 ^e | 0.52, 0.95 |
| Any mental disorder | 0.81 ^c | 0.72, 0.92 | 0.70 ^d | 0.62, 0.80 |
| Lifetime disorders | | | | |
| Major depression | 0.54 ^d | 0.47, 0.62 | 0.51 ^d | 0.45, 0.59 |
| Dysthymic disorder | 0.78 | 0.56, 1.10 | 0.75 | 0.53, 1.05 |
| Bipolar disorders 1 and 2 | 1.01 | 0.70, 1.44 | 0.83 | 0.57, 1.20 |
| Any mood disorder | 0.57 ^d | 0.50, 0.64 | 0.53 ^d | 0.50, 0.60 |
| Agoraphobia | 1.16 | 0.86, 1.58 | 1.03 | 0.74, 1.45 |
| Panic disorder | 0.70 ^c | 0.57, 0.86 | 0.65 ^d | 0.53, 0.80 |
| Social phobia | 0.65 ^d | 0.56, 0.76 | 0.61 ^d | 0.52, 0.71 |
| Generalized anxiety disorder | 0.51 ^d | 0.41, 0.64 | 0.50 ^d | 0.40, 0.63 |
| Posttraumatic stress disorder | 1.38 ^c | 1.15, 1.65 | 1.25 ^e | 1.04, 1.49 |
| Any anxiety disorder | 0.79 ^d | 0.71, 0.89 | 0.74 ^d | 0.65, 0.84 |
| Alcohol abuse | 0.91 | 0.76, 1.08 | 0.84 | 0.70, 1.01 |
| Alcohol dependence | 0.65 ^c | 0.52, 0.83 | 0.58 ^d | 0.46, 0.74 |
| Drug abuse | 0.84 | 0.69, 1.01 | 0.71 ^c | 0.59, 0.87 |
| Drug dependence | 0.84 | 0.63, 1.13 | 0.67 ^e | 0.49, 0.90 |
| Any substance-use disorder | 0.84 ^e | 0.72, 0.98 | 0.74 ^d | 0.63, 0.87 |
| Any mental disorder | 0.75 ^d | 0.67, 0.84 | 0.69 ^d | 0.62, 0.78 |

Abbreviations: CI, confidence interval; OR, odds ratio.

^a Odds ratios less than 1 indicate that black persons are less likely to experience the disorder compared with white persons.

^b Adjustments included controls for gender, age, education, and employment status.

^c $P < 0.01$.

^d $P < 0.001$.

^e $P < 0.05$.

of 8 disorders relative to whites. In fact, the higher odds of agoraphobia among blacks fell to nonsignificance with adjustments (OR = 1.30, 95% CI: 0.92, 1.85).

For lifetime psychiatric disorders, blacks experienced significantly lower odds of 9 disorders and similar odds of 6 disorders compared with whites. Nevertheless, blacks were 38% more likely to report PTSD (OR = 1.38, 95% CI: 1.15, 1.65).

In final models, blacks reported lower odds of 11 and similar odds of 4 lifetime disorders compared with whites. However, blacks' higher odds of PTSD remained statistically significant (OR = 1.25, 95% CI: 1.04, 1.49).

Women. In Table 3, logistic regression analyses for past-year and lifetime disorders are shown for women. For past-year disorders, black women reported significantly lower odds of 5

Table 3. Black-White Odds Ratios^a for Past-Year and Lifetime Disorders Among Women (*n* = 6,531), National Survey of American Life and National Comorbidity Survey Replication, United States, 2001–2003

| Psychiatric Disorder | Crude OR | 95% CI | Adjusted OR ^b | 95% CI |
|-------------------------------|-------------------|------------|--------------------------|------------|
| Past-year disorders | | | | |
| Major depression | 0.78 ^d | 0.65, 0.92 | 0.72 ^d | 0.60, 0.86 |
| Dysthymic disorder | 0.96 | 0.61, 1.51 | 0.87 | 0.52, 1.47 |
| Bipolar disorders 1 and 2 | 0.88 | 0.54, 1.43 | 0.69 | 0.41, 1.16 |
| Any mood disorder | 0.76 ^d | 0.65, 0.89 | 0.68 ^e | 0.58, 0.80 |
| Agoraphobia | 1.73 ^d | 1.19, 2.52 | 1.41 | 0.92, 2.17 |
| Panic disorder | 0.91 | 0.67, 1.24 | 0.82 | 0.61, 1.11 |
| Social phobia | 0.85 | 0.68, 1.05 | 0.73 ^c | 0.57, 0.95 |
| Generalized anxiety disorder | 0.52 ^e | 0.38, 0.72 | 0.51 ^e | 0.36, 0.71 |
| Posttraumatic stress disorder | 1.02 | 0.80, 1.30 | 0.95 | 0.74, 1.21 |
| Any anxiety disorder | 0.89 | 0.77, 1.03 | 0.80 | 0.69, 0.94 |
| Alcohol abuse | 0.63 | 0.29, 1.32 | 0.48 | 0.22, 1.04 |
| Alcohol dependence | 1.03 | 0.51, 2.11 | 0.82 | 0.40, 1.67 |
| Drug abuse | 1.54 | 0.68, 3.52 | 1.00 | 0.43, 2.30 |
| Drug dependence | 1.20 | 0.43, 3.41 | 0.90 | 0.34, 2.44 |
| Any substance-use disorder | 0.93 | 0.60, 1.43 | 0.70 | 0.45, 1.08 |
| Any mental disorder | 0.85 ^d | 0.75, 0.95 | 0.75 ^e | 0.66, 0.85 |
| Lifetime disorders | | | | |
| Major depression | 0.53 ^e | 0.46, 0.60 | 0.53 ^e | 0.46, 0.60 |
| Dysthymic disorder | 0.74 | 0.50, 1.10 | 0.71 | 0.46, 1.10 |
| Bipolar disorders 1 and 2 | 0.86 | 0.58, 1.27 | 0.70 | 0.46, 1.05 |
| Any mood disorder | 0.53 ^e | 0.47, 0.60 | 0.52 ^e | 0.46, 0.59 |
| Agoraphobia | 1.12 | 0.79, 1.59 | 0.97 | 0.64, 1.45 |
| Panic disorder | 0.67 ^d | 0.53, 0.85 | 0.62 ^e | 0.49, 0.79 |
| Social phobia | 0.69 ^e | 0.58, 0.83 | 0.63 ^e | 0.52, 0.77 |
| Generalized anxiety disorder | 0.49 ^e | 0.39, 0.62 | 0.50 ^e | 0.39, 0.63 |
| Posttraumatic stress disorder | 1.34 ^d | 1.10, 1.62 | 1.25 ^c | 1.03, 1.52 |
| Any anxiety disorder | 0.83 ^d | 0.73, 0.94 | 0.77 ^e | 0.68, 0.89 |
| Alcohol abuse | 0.66 ^d | 0.50, 0.88 | 0.57 ^e | 0.42, 0.77 |
| Alcohol dependence | 0.70 ^c | 0.50, 1.00 | 0.60 ^d | 0.43, 0.83 |
| Drug abuse | 0.75 ^c | 0.57, 0.99 | 0.59 ^d | 0.44, 0.79 |
| Drug dependence | 0.66 ^c | 0.44, 0.99 | 0.51 ^d | 0.33, 0.80 |
| Any substance-use disorder | 0.72 ^d | 0.57, 0.90 | 0.60 ^e | 0.48, 0.75 |
| Any mental disorder | 0.71 ^e | 0.64, 0.79 | 0.66 ^e | 0.59, 0.75 |

Abbreviations: CI, confidence interval; OR, odds ratio.

^a Odds ratios less than 1 indicate that black persons are less likely to experience the disorder compared with white persons.

^b Adjustments included controls for age, education, and employment status.

^c $P < 0.05$.

^d $P < 0.01$.

^e $P < 0.001$.

disorders (i.e., MDD, any mood disorder, GAD, and any mental disorder), and black women reported similar odds of 11 past-year disorders relative to white women. In contrast, black women experienced higher odds of agoraphobia relative to white women (OR = 1.73, 95% CI: 1.19, 2.52). However, this was later reduced

to nonsignificance with adjustments, indicating that age and socioeconomic status (SES) explained black women's higher odds of past-year agoraphobia relative to their white female counterparts. For other disorders, accounting for age and SES intensified the mental health advantage of black women. For

example, the odds ratio for black women for “any mental disorder” was 0.85 (95% CI: 0.75, 0.95) in the crude model, and 0.75 (95% CI: 0.66, 0.85) with adjustments.

For lifetime disorders, black women experienced relatively lower odds of 12 disorders and similar odds of 4 disorders (i.e., dysthymic disorder, bipolar disorders 1 and 2, and agoraphobia) compared with white women. However, black women were 34% more likely to experience lifetime PTSD (OR = 1.34, 95% CI: 1.10, 1.62). These patterns persisted with adjustments.

Men. Racial patterns in mental health among men are shown in Table 4. While black men had significantly lower odds of 5 past-year disorders (i.e., MDD, social phobia, GAD, any anxiety disorder, and any mental disorder), black and white men had similar odds of 11 past-year disorders. After adjustments, black men reported significantly lower odds of 6 past-year disorders and were not significantly different from white men for the other 10 disorders. Consistent with patterns observed among women, adjusting for age and SES intensified the mental health advantage of black men over white men. For example, while the odds of any mood disorder were similar for black and white men in the crude model, a black male advantage emerged after accounting for differences in age and socioeconomic factors (OR = 0.67, 95% CI: 0.49, 0.91).

For lifetime disorders, black men experienced lower odds of 7 disorders and similar odds to white men for 9 disorders. As observed with past-year estimates, the racial gap in lifetime disorders among men widened in the model including adjustments. While the crude model showed that black men had lower odds of experiencing any mental disorder (OR = 0.79, 95% CI: 0.66, 0.95), their lower odds of any lifetime mental disorder intensified (OR = 0.73, 95% CI: 0.60, 0.90) after accounting for age and socioeconomic factors. In sum, we found evidence of the paradox across all measures of mental disorder among men.

DISCUSSION

This study examined racial differences in psychiatric disorders to clarify the epidemiologic patterning of the black-white mental health paradox, which finds that blacks have similar or lower rates of psychiatric disorder than whites despite experiencing greater stress exposure and economic disadvantage. Inconsistencies across studies raised critical questions, such as the extent to which black-white differences in mental health are disorder-specific, dependent on the timing of diagnoses, or consistent for women and men. The present study aimed to address these issues and shed new light on the paradox by using a nationally representative sample of African-American and white adults. In general, our results provide overwhelming evidence of the black-white mental health paradox and point to several new directions to consider in future research.

This study offers several key insights for the paradox literature. First, it appears that blacks’ mental health advantage extends across a wide range of psychiatric disorders. Given that paradox studies have focused almost exclusively on depression, it was unclear whether observed racial differences were disorder-specific (1, 11–17). Building on the few studies examining multiple psychiatric diagnoses (3, 19), the present investigation sought to assess a broader array of disorders and disorder

categories. Across the 16 different mental health outcomes considered, we found overwhelming evidence in support of the paradox, such that blacks reported lower or similar rates of psychiatric disorders compared with whites. These findings demonstrate that the mental health paradox is not disorder-specific, raising the possibility that lower risk of mental disorder among black Americans might arise from a single underlying mechanism that contributes to lower risk across multiple outcomes.

Second, the results of this study suggest that observed black-white patterns in mental health are not a function of differences in the timing of diagnoses. Observing that previous research on the paradox often assumed that racial patterns in mental health are similar for past-year and lifetime diagnoses, we tested the possibility that the paradox might arise from potential black-white differences in the timing of diagnoses. Our results indicated that blacks’ mental health advantage extends to both past-year and lifetime experiences of mental disorder. However, the black-white mental health advantage was more pronounced for lifetime disorders. This finding is consistent with prior studies (10) and points to potential differences in the racial patterning of mental health across the life course. This hypothesis should be more adequately tested in future work examining the extent to which racial patterns of mental disorder are similar across different age groups (1).

Third, racial patterns in mental health were consistent among women and men. Drawing from prior studies suggesting gendered and racialized differences in socialization, we introduced the possibility that racial differences in psychiatric disorders might be more pronounced among women. Despite discovering that the paradox prevails among both women and men, more research is needed to explore whether the processes and mechanisms that contribute to these patterns are distinct for women and men. This is especially important because of the difference in mental health patterns for women and men (i.e., women are more likely to exhibit symptoms of internalizing disorders while men are more likely to develop disorders with externalizing features).

Another interesting pattern in the results surfaced: Adjusting for age and SES intensified blacks’ mental health advantage over whites. Differences in the crude and final models show that after controlling for sociodemographic factors—especially SES—in many cases, blacks had an even larger mental health advantage compared with whites. In other words, if blacks and whites had the same SES levels, blacks would experience an even larger mental health advantage over whites (for a similar argument, see Keyes (31)). Future work should further disentangle the interrelationships among SES, age, race, and different mental health outcomes, because this could provide further nuance to the paradox.

Finally, although the present study presents strong evidence in support of the paradox, there was one exception that should be noted: Blacks had a higher risk of lifetime PTSD than whites. While consistent with patterns observed in a study by Himle et al. (19), our results also indicated that the black-white difference in lifetime PTSD was not explained by sociodemographic factors. Given evidence that blacks experience greater lifetime exposure to social stressors and trauma compared with whites (13, 31), however, it comes as no surprise that they might also face disproportionately higher risk of PTSD, one of the few mental illnesses that identifies a specific external stimulus (i.e., exposure to trauma) as a primary etiologic agent (30).

Table 4. Black-White Odds Ratios^a for Past-Year and Lifetime Disorders Among Men ($n = 4,721$), National Survey of American Life and National Comorbidity Survey Replication, United States, 2001–2003

| Psychiatric Disorder | Crude OR | 95% CI | Adjusted OR ^b | 95% CI |
|-------------------------------|-------------------|------------|--------------------------|------------|
| Past-year disorders | | | | |
| Major depression | 0.65 ^c | 0.47, 0.89 | 0.57 ^c | 0.40, 0.80 |
| Dysthymic disorder | 0.65 | 0.30, 1.45 | 0.63 | 0.28, 1.40 |
| Bipolar disorders 1 and 2 | 1.20 | 0.60, 2.38 | 0.99 | 0.49, 1.98 |
| Any mood disorder | 0.78 | 0.58, 1.05 | 0.67 ^d | 0.49, 0.91 |
| Agoraphobia | 1.24 | 0.66, 2.35 | 1.08 | 0.58, 1.98 |
| Panic disorder | 0.83 | 0.49, 1.40 | 0.79 | 0.46, 1.34 |
| Social phobia | 0.55 ^c | 0.38, 0.79 | 0.50 ^e | 0.35, 0.73 |
| Generalized anxiety disorder | 0.33 ^c | 0.18, 0.61 | 0.31 ^e | 0.17, 0.59 |
| Posttraumatic stress disorder | 1.11 | 0.70, 1.77 | 1.07 | 0.65, 1.74 |
| Any anxiety disorder | 0.63 ^c | 0.46, 0.84 | 0.58 ^e | 0.43, 0.78 |
| Alcohol abuse | 0.88 | 0.54, 1.41 | 0.73 | 0.47, 1.15 |
| Alcohol dependence | 0.94 | 0.52, 1.70 | 0.80 | 0.45, 1.43 |
| Drug abuse | 0.60 | 0.27, 1.33 | 0.55 | 0.24, 1.27 |
| Drug dependence | 1.97 | 0.77, 5.02 | 1.38 | 0.53, 3.59 |
| Any substance-use disorder | 0.86 | 0.58, 1.29 | 0.71 | 0.49, 1.04 |
| Any mental disorder | 0.72 ^c | 0.57, 0.92 | 0.64 ^e | 0.51, 0.82 |
| Lifetime disorders | | | | |
| Major depression | 0.51 ^e | 0.40, 0.66 | 0.49 ^e | 0.37, 0.65 |
| Dysthymic disorder | 0.81 | 0.50, 1.30 | 0.81 | 0.51, 1.29 |
| Bipolar disorders 1 and 2 | 1.22 | 0.67, 2.21 | 1.04 | 0.57, 1.91 |
| Any mood disorder | 0.59 ^e | 0.46, 0.75 | 0.56 ^e | 0.43, 0.72 |
| Agoraphobia | 1.17 | 0.65, 2.12 | 1.13 | 0.63, 2.02 |
| Panic disorder | 0.71 | 0.45, 1.11 | 0.71 | 0.45, 1.11 |
| Social phobia | 0.59 ^e | 0.45, 0.77 | 0.57 ^e | 0.43, 0.74 |
| Generalized anxiety disorder | 0.51 ^c | 0.33, 0.79 | 0.50 ^c | 0.33, 0.78 |
| Posttraumatic stress disorder | 1.31 | 0.95, 1.80 | 1.20 | 0.87, 1.65 |
| Any anxiety disorder | 0.68 ^c | 0.55, 0.84 | 0.67 ^e | 0.53, 0.83 |
| Alcohol abuse | 1.11 | 0.91, 1.36 | 1.00 | 0.80, 1.24 |
| Alcohol dependence | 0.66 ^c | 0.49, 0.89 | 0.57 ^c | 0.41, 0.78 |
| Drug abuse | 0.94 | 0.74, 1.19 | 0.79 | 0.61, 1.02 |
| Drug dependence | 1.02 | 0.67, 1.53 | 0.80 | 0.52, 1.22 |
| Any substance-use disorder | 0.96 | 0.80, 1.16 | 0.83 | 0.68, 1.01 |
| Any mental disorder | 0.79 ^d | 0.66, 0.95 | 0.73 ^c | 0.60, 0.90 |

Abbreviations: CI, confidence interval; OR, odds ratio.

^a Odds ratios less than 1 indicate that black persons are less likely to experience the disorder compared with white persons.

^b Adjustments included controls for age, education, and employment status.

^c $P < 0.01$.

^d $P < 0.05$.

^e $P < 0.001$.

Furthermore, this finding appears to have been driven by women: Black women experienced higher risk of lifetime PTSD relative to white women. Given the ability of this illness to stifle participation in social life, black women's disproportionately higher risk for PTSD is justification for the development of race- and gender-conscious interventions to address this particular mental health problem.

Limitations and implications for future research

While this study adds important subtleties to the paradox, no study is without limitations. First, the sample included only the noninstitutionalized population. This could obscure racial differences in mental disorder, especially given high incarceration rates of black men in particular (1). Second, despite

experiencing relatively lower risk of mental disorder compared with whites in general, mood, anxiety, and substance-use disorders are more persistent among blacks (3, 21). Thus, mental disorder persistence could differ at the intersection of both race and gender. Third, there is a possibility of racial differences in symptom recall, which could possibly lead to an undercount of mental disorder prevalence in blacks (10). However, this possibility awaits future study. Fourth, some research suggests that blacks experience higher rates of psychological distress and generally worse subjective mental health (e.g., life satisfaction, happiness) compared with whites (2, 10). Future work should explore factors that explain the disjuncture in racial patterns for subjective measures of mental health in comparison with psychiatric disorders. Finally, this study did not include 2 classes of mental disorder: personality disorders and serious mental disorders with psychotic features. The social epidemiology of these 2 classes of mental disorder, however, could run counter to the paradox. For example, Gibbs et al. (3) showed that blacks experience higher rates of paranoid personality disorder compared with whites. Thus, the racial patterning of personality disorders merits additional empirical attention.

Contributions

In summary, we have contributed to the paradox literature by using nationally representative data to demonstrate that the black-white mental health paradox extends across lifetime and past-year disorders and applies to both women and men. We also found that the black health advantage is more pronounced after accounting for sociodemographic factors. Future paradox studies should be attentive to these nuances, considering how race intersects with other social status characteristics (e.g., age and SES) when evaluating whether the paradox applies to multiple psychiatric disorders and is similarly reflected across sub-populations among blacks and whites. Beyond its implications for research, identifying the protective mechanisms underlying the black-white mental health paradox may point to more effective avenues of intervention, which are needed to reduce long-standing racial inequalities in physical health status.

ACKNOWLEDGMENTS

Author affiliations: Department of Sociology, Vanderbilt University, Nashville, Tennessee (Christy L. Erving, Cleothia Frazier); and Department of Community Health Sciences, Fielding School of Public Health, University of California, Los Angeles, Los Angeles, California (Courtney S. Thomas).

This work was partially funded by 3 grants received by the second author (C.S.T.): University of California, Los Angeles, and Charles Drew University Resource Centers for Minority Aging Research Center for Health Improvement of Minority Elderly via the National Institutes of Health/National Institution on Aging (grant P30-AG021684); University of California, Los Angeles, Clinical and Translational Science Institute via the National Institutes of Health/National Center for Advancing Translational Sciences (grant UL1TR001881); and California Center for

Population Research at University of California, Los Angeles, which receives core support from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (grant P2C – HD041022).

We thank Dr. Roland Thorpe for providing feedback on an earlier draft of this paper.

Conflict of interest: none declared.

REFERENCES

1. Barnes DM, Keyes KM, Bates LM. Racial differences in depression in the United States: how do subgroup analyses inform a paradox? *Soc Psychiatry Psychiatr Epidemiol*. 2013; 48(12):1941–1949.
2. Erving CL, Thomas CS. Race, emotional reliance, and mental health. *Soc Mental Health*. 2017;8(1):69–83.
3. Gibbs TA, Okuda M, Oquendo MA, et al. Mental health of African Americans and Caribbean blacks in the United States: results from the National Epidemiological Survey on Alcohol and Related Conditions. *Am J Public Health*. 2013;103(2): 330–338.
4. Jackson JS, Knight KM, Rafferty JA. Race and healthy unhealthy behaviors: chronic stress, the HPA axis, and physical and mental health disparities over the life course. *Am J Public Health*. 2010;100(5):933–939.
5. Kessler RC, McGonagle KA, Zhao S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. *Arch Gen Psychiatry*. 1994;51(1):8–19.
6. Kessler RC, Berglund P, Demler O, et al. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):593–602.
7. Mouzon DM. Can family relationships explain the race paradox in mental health? *J Marriage Fam*. 2013;75(2): 470–485.
8. Mouzon DM. Relationships of choice: can friendships or fictive kinships explain the race paradox in mental health? *Soc Sci Res*. 2014;44:32–43.
9. Neighbors HW, Williams DR. The epidemiology of mental disorder. In: Braithwaite RL, Taylor SE, eds. *Health Issues in the Black Community*. San Francisco, CA: Jossey-Bass Publishers; 2001:99–128.
10. Barnes DM, Bates LM. Do racial patterns in psychological distress shed light on the black-white depression paradox? A systematic review. *Soc Psychiatry Psychiatr Epidemiol*. 2017; 52(8):913–928.
11. Compton WM, Conway KP, Stinson FS, et al. Changes in the prevalence of major depression and comorbid substance use disorders in the United States between 1991–1992 and 2001–2002. *Am J Psychiatry*. 2006;163(12):2141–2147.
12. Hasin DS, Goodwin RD, Stinson FS, et al. Epidemiology of major depressive disorder: results from the National Epidemiologic Survey on Alcoholism and Related Conditions. *Arch Gen Psychiatry*. 2005;62(10):1097–1106.
13. Keyes KM, Barnes DM, Bates LM. Stress, coping, and depression: testing a new hypothesis in a prospectively studied general population sample of US-born whites and blacks. *Soc Sci Med*. 2011;72(5):650–659.
14. Mezuk B, Rafferty JA, Kershaw KN, et al. Reconsidering the role of social disadvantage in physical and mental health: stressful life events, health behaviors, race, and depression. *Am J Epidemiol*. 2010;172(11):1238–1249.

15. Riolo SA, Nguyen TA, Greden JF, et al. Prevalence of depression by race/ethnicity: findings from the National Health and Nutrition Examination Survey III. *Am J Public Health*. 2005;95(6):998–1000.
16. Rodriguez EJ, Gregorich SE, Livaudais-Toman J, et al. Coping with chronic stress by unhealthy behaviors: a reevaluation among older adults by race/ethnicity. *J Aging Health*. 2017; 29(5):805–825.
17. Williams DR, González HM, Neighbors H, et al. The prevalence and distribution of major depressive disorders in African Americans, Caribbean blacks and non-Hispanic whites: results from the National Survey of American Life. *Arch Gen Psychiatry*. 2007;64(3):305–315.
18. Breslau J, Aguilar-Gaxiola S, Kendler KS, et al. Specifying race-ethnic differences in risk for psychiatric disorder in a US national sample. *Psychol Med*. 2006;36(1):57–68.
19. Himle JA, Baser RE, Taylor RJ, et al. Anxiety disorders among African American blacks of Caribbean descent and non-Hispanic whites in the United States. *J Anxiety Disord*. 2009;23(5):578–590.
20. Breslau J, Kendler KS, Su M, et al. Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychol Med*. 2005;35(3):317–327.
21. Kiecolt KJ, Hughes M, Keith VM. Race, social relationships, and mental health. *Pers Relatsh*. 2008;15(2):229–245.
22. Levine DS, Himle JA, Taylor RJ, et al. Panic disorder among African Americans, Caribbean blacks and non-Hispanic whites. *Soc Psychiatry Psychiatr Epidemiol*. 2013;48(5):711–723.
23. Williams DR, Haile R, González HM, et al. The mental health of black Caribbean immigrants: results from the National Survey of American Life. *Am J Public Health*. 2007;97(1): 52–59.
24. Rosenfield S, Mouzon D. Gender and mental health. In: Aneshensel CS, Phelan JC, Bierman A, eds. *Handbook of the Sociology of Mental Health*. Media, Dordrecht: Springer Science+Business; 2013:277–296.
25. Rosenfield S. Triple jeopardy? Mental health at the intersection of gender, race, and class. *Soc Sci Med*. 2012;74(11): 1791–1801.
26. Beauboeuf-Lafontant T. “You have to show strength”: an exploration of gender, race, and depression. *Gend Soc*. 2007; 21(1):28–51.
27. Courtenay WH. Engendering health: a social constructionist examination of men’s health beliefs and behaviors. *Psychol Men Masc*. 2000;1(1):4–15.
28. Pennell BE, Bowers A, Carr D, et al. The development and implementation of the National Comorbidity Survey Replication, the National Survey of American Life, and the National Latino and Asian American Survey. *Int J Methods Psychiatr Res*. 2004;13(4): 241–269.
29. Jackson JS, Neighbors HW, Nesse RM, et al. Methodological innovations in the National Survey of American Life. *Int J Methods Psychiatr Res*. 2004;13(4):289–298.
30. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*. Washington, DC: American Psychiatric Association; 1994.
31. Keyes CL. The black-white paradox in health: flourishing in the face of social inequality and discrimination. *J Pers*. 2009; 77(6):1677–1706.