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Quality of depression treatment in Black Americans with major depression and comorbid medical illness ☆

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ABSTRACT

Objective: The objective was to evaluate how comorbid type 2 diabetes (T2DM) and hypertension (HT) influence depression treatment and to assess whether these effects operate differently in a nationally representative community-based sample of Black Americans.
Methods: Data came from the National Survey of American Life (N=3673), and analysis is limited to respondents who met lifetime criteria for major depression (MD) (N=402). Depression care was defined according to American Psychiatric Association (APA) guidelines and included psychotherapy, pharmacotherapy and satisfaction with services. Logistic regression was used to examine the effects of T2DM and HT on quality of depression care.
Results: Only 19.2% of Black Americans with MD alone, 7.8% with comorbid T2DM and 22.3% with comorbid HT reported APA-guideline-concordant psychotherapy or antidepressant treatment. Compared to respondents with MD alone, respondents with MD+T2DM/HT were no more or less likely to receive depression care. Respondents with MD+HT+T2DM were more likely to report any guideline-concordant care (odds ratio=3.32; 95% confidence interval, 1.07–10.31).
Conclusions: Although individuals with MD and comorbid T2DM+HT were more likely to receive depression care, guideline-concordant depression care is low among Black Americans, including those with comorbid medical conditions.

Black Americans with major depressive disorder (MD) report more chronic and severe symptoms [1] and are less likely to receive adequate mental health care than non-Hispanic whites [1–3]. Medical comorbidities including type 2 diabetes mellitus (T2DM) and hypertension (HT) can influence depression care [4,5]. Due to their increased risk for T2DM [6] and HT [7], the effects of these medical comorbidities on depression treatment are particularly relevant for Black Americans. Understanding how depression treatment for Black Americans is influenced by comorbid T2DM or HT can contribute to effective mental health care for minority populations, possibly decreasing mental health care disparities.

Evidence suggests that Blacks are underdiagnosed with and undertreated for depression [2,3,8–15]. Much of this disparity may stem from lower treatment initiation rates [16] due to physicians' tendency to underdetect symptoms [17] and minimize Black patients' emotional symptoms [18]. Blacks often receive older, less tolerable and less safe antidepressants [17,19,20]. Blacks also endorse attitudes [21,22] and concerns about stigma that impede treatment and are potentially less accepting of pharmacological treatment [17,19,23,24]. Lastly, Blacks with depression often present with somatic symptoms [25,26] and have comorbid medical illnesses [27] that complicate diagnosis and treatment. Given that Blacks tend to seek mental health services in primary care rather than in specialized mental health settings [28], understanding the effects of comorbid medical conditions is critical to improving mental health treatment for Blacks.

Medical comorbidities are hypothesized to influence depression care through two competing pathways [4,5]. The *exposure effect* [4,29,30] posits that individuals with medical comorbidities will receive better depression care due to more frequent contact with their physicians [31]. In contrast, the *crowd-out effect* postulates deprioritization of and poorer depression care due to competing demands of comorbid medical conditions that monopolize physicians' and patients' time and attention [32–37]. However, some studies report comparable depression treatment rates regardless of the presence of medical comorbidities [27,29,38–40]. These inconsistencies may be due to differences in study population and the specific medical comorbidities examined.

Fewer studies have examined the specific effects of T2DM and HT on depression care; these conditions are especially prevalent among Black Americans and are often comorbid with depression [41–43]. Findings are mixed, with some reporting better treatment [4,44–47] while others have reported worse treatment [14] or null effects [5]. The handful of studies that have investigated these relationships among Blacks report that Blacks with comorbid depression and T2DM

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are less likely to be diagnosed with [48,49] and treated for depression [49–52]. One plausible explanation is that Blacks with comorbid T2DM and depression are unlikely to discuss their depression with their physicians, partly as a result medical mistrust, stigma and cultural beliefs around responding to depression with stoicism [52]. In fact, Blacks with comorbid depression and T2DM who perceive discrimination in health care are less likely to seek depression treatment even though they may experience more symptoms [48]. Depression has also been shown to be associated with poorer medication adherence among Blacks with comorbid HT and depression [53,54]. However, to our knowledge, no studies have examined the effects of comorbid HT or comorbid HT and T2DM on depression treatment among Blacks.

Furthermore, extant studies have used small [50] or convenience samples [48,49]. Studies have also used screening tools like the Center for Epidemiological Studies Depression Scales (CESD) [48,49] rather than more comprehensive structured diagnostic assessments of depressive disorder. This may limit the validity of the studies, as the CESD was not intended as a diagnostic tool [55].

The primary aim of the study is to evaluate the two competing hypotheses — the exposure and crowd-out effects — regarding how comorbid medical illness influences depression treatment in a nationally representative sample of Blacks. The secondary aim is to assess whether these effects differ for comorbid T2DM versus HT. If we find that individuals with both depression and a medical comorbidity (i.e., T2DM, HT) report more guideline-concordant depression care than those without a medical comorbidity, this will support the exposure effect hypothesis. On the other hand, if we find that individuals with both depression and a medical comorbidity report less depression treatment than those without a medical comorbidity, this will support the crowd-out hypothesis.

1. Method

1.1. Data source

Data came from the National Survey of American Life (NSAL), a cross-sectional, nationally representative study of mental health among Black Americans conducted from 2001 to 2003. Interviews were completed in the home, and interviewers were race-matched to participants [56]. Participants were community-dwelling African Americans ($n=3570$), Blacks of Caribbean descent ($n=1623$) and non-Hispanic Whites ($n=1006$) living in census tracts with at least 10% Black Americans, recruited through multistage probability sampling. Overall response rate was 72.3%. Additional information about the NSAL design is available elsewhere [56]. Current analyses were limited to African Americans and Carribbean Blacks aged 30 years or older at the time of interview, who met the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) criteria for MD and had complete data on depression treatment history ($n=402$).

1.2. Measures

1.2.1. Major depression

MD status was assessed with the World Mental Health Composite International Diagnostic Interview (CIDI), a structured instrument used to assess DSM-IV diagnoses [57]. Previous research indicates moderate to substantial agreement between CIDI and blind clinical diagnoses ($\kappa=0.53$–0.71) [58], and moderate concordance between CIDI and Structured Clinical Interview for DSM-IV diagnoses of MD among African Americans ($\kappa=0.43$), but lower concordance for Caribbean Blacks ($\kappa=0.10$), in the NSAL [1].

1.2.2. Depression severity

Depression severity was indexed by number of episodes and impairment [57,59,60]. Number of episodes was a continuous variable, measured by reported number of depressive episodes in the past 12 months. Impairment was measured by the Sheehan Disability Scale, which asks respondents to rate on a 0–10 scale how much their depression interfered with functioning in home management, ability to work, relationships with others and social life. [57,59,60].

1.2.3. T2DM and HT

Diabetes status was assessed by self-report of physician diagnosis of "diabetes or 'sugar'" and did not differentiate between type 1 and type 2 diabetes. Type 1 diabetes typically onsets in adolescence, and thus to ensure that the majority of cases are T2DM, we restricted the sample to those aged 30 and older. Ninety to 95% of diabetes cases in adulthood are T2DM [6]. HT status was also assessed by self-report of physician diagnosis. Self-reported HT and diabetes have high concordance with medical record diagnoses [61,62].

1.2.4. Demographic characteristics and health care utilization

Demographic variables were age, sex, ethnicity (African American or Caribbean Black), insurance status (uninsured, insured but no mental health coverage, or insured with mental health coverage), household income (categorized into tertiles) and education ($\leq$high school or $>$high school). General health care utilization was defined as having a usual source of care (dichotomized as yes vs. no).

1.2.5. Depression care

Three indicators of depression treatment quality were examined: (a) any guideline-concordant treatment, (b) guideline-concordant psychotherapy and (c) $\geq$60 days of antidepressant use. Quality of psychotherapy and antidepressant use were evaluated according to American Psychiatric Association (APA) Practice Guideline for Treatment of Patients with MD [63]. Past-year guideline-concordant psychotherapy is $\geq$4 visits to a provider each lasting an average of 30 minutes and, for antidepressants, $\geq$60-day use under guidance of a psychiatrist or other prescribing physician for $\geq$4 visits. Due to sparse data in some cells, we modified the criterion for antidepressant use to be at least 60 days' use. This standard for evaluating quality of depression care was used in a recent large-scale study [2]. Any guideline-concordant care was indexed as having received either guideline-concordant psychotherapy or antidepressant use.

1.3. Data analysis

To address our study aims, we examined individuals with MD, with and without comorbid T2DM, and with and without comorbid HT. We also examined individuals with major depression with and without comorbid T2DM and HT separately to determine the effects of the medical complexity of this group. First, we examined bivariate associations between comorbidity status (MD+T2DM vs. MD only, MD+HT vs. MD only and MD+T2DM+HT vs. MD only) and the covariates and dependent variables using F tests for continuous variables and χ^2 tests for categorical variables. Percentage, mean, standard deviation, significance tests and logistic regression values were weighted to reflect the US population using sample weight variables in the Complex Samples module of SPSS.

For multivariable analyses, we used logistic regression to compare the likelihood of the three depression care outcomes among participants with MD alone with participants with comorbid T2DM and/or HT. Models were adjusted for age, sex, ethnicity, education and insurance status. We did not adjust for household income due to its correlation with education. We assessed the relative fit of our models by comparing log-likelihood values.

Analyses were conducted using SPSS version 19. All P values refer to two-tailed tests. The NSAL is approved by the Institutional Review Board at the University of Michigan. This analysis was determined to

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