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Racial/ethnic differences in the effects of psychiatric disorders on employment

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Abstract

Prior research on the disability burden of mental disorders has focused on the non-Latino white population, despite the growing size and importance of racial/ethnic minorities in the labor market and in the US population as a whole. This paper is one of the first to test for racial/ethnic differences in the effects of mental disorder on employment outcomes with data from the National Institute of Mental Health (NIMH) Collaborative Psychiatric Epidemiological Studies (CPES). We find that recent psychiatric disorder is associated with a reduction in the likelihood of employment for men of all racial/ethnic groups relative to non Latino whites with the possible exception of Caribbeans. These findings are driven by the effects of anxiety and affective disorders. For females, only affective disorders appear to detract from employment overall. Much larger negative effects are found for Latino women with anxiety disorders.

Keywords

racial/ethnic minorities; mental health; psychiatric disorders; labor market outcomes

Introduction

Recent studies indicate that psychiatric disorders are associated with adverse labor market outcomes including unemployment, reduced labor supply, absenteeism, disability-related work leaves, lower perceived workplace productivity, and reduced earnings (Chatterji et al., 2007; Alexandre & French, 2001, Kessler & Frank, 1997, Frank & Gertler, 1991, Ettner et al., 1997, Berndt et al., 1998, Kouzis & Eaton, 1994, Kessler et al., 1999). Frank and Gertler (1991), for example, report that mental distress is associated with a 21 percent reduction in earnings in their study of men in the Baltimore Epidemiologic Catchment Area (ECA) study. Ettner et al. (1997) using the National Comorbidity Study (NCS), report that meeting diagnostic criteria for a psychiatric disorder in the past 12 months is associated with a reduction of about 11 percentage points in the probability of being employed for both men and women. Chatterji et al. (2007), based on the National Latino and Asian American Study (NLAAS) find that among Latinos, meeting diagnostic criteria for a disorder in the past 12 months reduces the

likelihood of employment by about 11 percentage points for males, and by about 22 percentage points for females.

Most prior research on mental disorders and labor market outcomes is based on either geographically narrow samples or on two broader-based data sources -- the ECA surveys, which were conducted in five communities during the early 1980's, and the NCS, a national survey conducted during the early 1990's. The ECA surveys and the NCS are large, population-based surveys that include diagnostic interviews for a range of psychiatric illnesses. Notably, the NCS was the first nationally representative survey to include a fully structured research diagnostic interview to measure psychiatric illnesses (NCS, 2009). However, there are potential disadvantages to using data from the ECA and NCS to inform current public policy. First, these surveys were conducted with English speaking respondents about 25 and 15 years ago respectively. The sample sizes for ethnic minorities and immigrants in the ECA and NCS are relatively small. Consequently, prior researchers have not been able to examine the relationship between psychiatric disorder and labor market outcomes in racial/ethnic minority populations.

This paper addresses this gap in the literature by using recent, pooled data from the NIMH Collaborative Psychiatric Epidemiological Studies (CPES) to estimate the effects of psychiatric disorders on employment and to test for racial/ethnic differences in these effects. The CPES offers the most recent, national information on mental disorders and correlates of mental disorders. Further, it has the largest samples of racial/ethnic minorities currently available. Our results indicate that mental disorders (particularly affective and anxiety disorders) appreciably dampen the probability of employment among men of all racial/ethnic groups relative to non Latino whites, with the possible exception of Caribbeans. Among females, the main effects of disorder on employment are much weaker overall. However, we do find large, negative effects for Latinas, and possibly African-Americans, with anxiety disorders.

Effects of psychiatric disorders on labor market outcomes in racial/ethnic minority populations

Racial and ethnic minorities and immigrants are an increasingly large proportion of the US population, and the fastest growing part of the US labor force. In 2005, 33 percent of the US population was from a racial or ethnic minority. This rate is projected to increase to 39 percent by 2020. The US Bureau of Labor Statistics (BLS) predicts that by 2050, the percentage of the labor force that is non-Latino white will decline to 53 percent from 73 percent in 2000 (Toossi, 2002). This change includes increases in the share of the labor force for many minority groups: Latino share is expected to from 11 percent to 24 percent; African-American share from 12 to 14 percent, and the Asian share from 5 to 11 percent (Toossi, 2002). In 2008, foreign born persons represented 15.6 percent of the US labor force (BLS, 2009). Further, the growing diversity of the US population and workforce may have important implications for the labor market consequences of psychiatric illness. The consequences of psychiatric disorders in the labor market may be different for racial/ethnic minorities compared to non-Latino whites. Prior data sources were not suitable to test for such differences.

Should we expect racial/ethnic differences in the effects of psychiatric disorders on labor market outcomes? One may not expect to see such differences if race and ethnicity do not play a role in shaping individuals' labor market experiences. However, there are several reasons why there may exist racial/ethnic differences in the effects of psychiatric disorder. First, there are stark differences in the labor market experiences of some racial/ethnic minority groups compared to those of non-Latino whites (see Altonji & Blank, 1999 for a review).¹ Among African-Americans and Latinos, men and women earn lower hourly wages, work fewer weeks in a year, work fewer hours per week, and have higher unemployment rates compared to non-

Latino whites (Altonji & Blank, 1999). Foreign-born women are less likely to participate in the labor force and to be employed compared to native-born women of the same racial/ethnic group. Among men, however, foreign-born Blacks have better labor market outcomes than native-born Blacks (de Walque, 2008). Moreover, although there is little research available on Asians, they appear to fare better in the labor market than other racial/ethnic minority groups, doing at least as well as non-Latino whites. For example, the December 2008 unemployment rate was 5.1 percent among Asians compared to 11.7 percent among African-Americans and 6.5 percent among Whites (no separate data for Latinos were available) (BLS, 2009).

One reason some minority groups fare worse than non-Latino whites in the labor market is that these groups have low levels of human capital relative to non-Latino whites. African-Americans and Latinos have lower levels of educational attainment than non-Latino whites. In 2003, 57 percent of Latinos aged 25 and over had completed a high school degree compared to 89 percent of non-Latino whites, 80 percent of African-Americans, and 88 percent of Asians (Stoops, 2004). Limited English proficiency also may play a role for foreign-born racial/ethnic minorities. Based on 2000 Census data compiled by the Migration Policy Institute, about 35 percent of the foreign-born population aged 5 and over speaks English “not well” or “not at all” (Grieco, 2003).

Latinos and African-Americans are more likely than non-Latino whites to work in less-skilled jobs and occupations. Latinos, particularly Mexicans and Puerto Ricans, are over-represented in non-professional and service occupations (Kochar, 2005). Asians, on the other hand, are over-represented in managerial and professional occupations. In 2007, for example, Asians represented less than 5 percent of employed individuals, but 29 percent of computer software engineers and 17 percent of physicians (BLS, 2008).² We control for all these potential confounders in the multivariate analysis.

In addition to differences in education, English language proficiency, and occupation, labor market discrimination may explain some portion of the differences in labor market outcomes between non-Latino whites and minority and immigrant groups. Heckman (1998) and others, however, argue that evidence based on data from the 1990’s does not support the idea that labor market discrimination is an important component of differences in earnings, at least between African-Americans and whites (Heckman, 1998) Instead, differences in skills between groups appears to be a critical factor in explaining differences in earnings.

Onset of a psychiatric disorder may be particularly harmful for the labor outcomes of minority and immigrant individuals who already face numerous disadvantages in the labor market. There are several mechanisms through which psychiatric disorders may affect labor market outcomes. Each of these mechanisms may be exacerbated for racial/ethnic minorities. First, the symptoms of psychiatric illness (e.g. depressed mood, low energy level, reduced concentration) can directly impair an individual’s ability to obtain and maintain employment. These symptoms may be more likely to lead to adverse consequences, such as losing a job, for racial/ethnic minority workers, who are more likely than non-Latino whites to work in low-status jobs. Second, employers may feel they cannot accommodate an employee with health problems. Again, this may be particularly true of employers of less-educated and low status racial/ethnic minority workers..

Third, individuals with psychiatric disorders may face outright discrimination because of their health problems (Currie & Madrian, 1999; Ettner et al., 1997) which may be exacerbated by

¹Altonji & Blank (1999) note that prior work on racial differences in labor market outcomes focuses on African-Americans vs. whites. Much less is known about the experiences of Latinos, Asians, and other racial/ethnic groups.

²These tabulations ignore potentially important differences across sub-ethnic groups. Data on occupation and other labor market outcomes by sub-ethnic group, however, is not typically available, particularly for Asians.

discrimination based on race, ethnicity, language, culture, or skin color. For example, while a non-Latino white with a psychiatric disorder may have trouble finding employment because some employers discriminate against people with such health problems, an African-American with the same disorder may be even further disadvantaged if s/he faces discrimination based on both race and psychiatric disorder.

Methods

Our empirical goal is to determine whether there are racial/ethnic differences in the effect of psychiatric disorder on employment. We estimate the following equation (Eq. 1):

$$E = \alpha + P\delta + R\rho + (P * R)\pi + X\beta + \varepsilon$$

where E is a binary measure of current employment status (employed or not), α is an intercept, P is a binary measure of psychiatric disorder (recent disorder or no recent disorder), R is a set of indicators for each minority race/ethnicity group (African-American; Latino; Asian; Caribbean), $P * R$ is a set of race/psychiatric disorder interaction terms, X is a set of individual demographic, family background, and other characteristics that may affect employment, and ε is an error term. The coefficient δ represents the main effect of psychiatric disorder on outcomes. The coefficients π capture the interaction effects between each minority racial group and psychiatric disorder.

For African-Americans and Latinos, minority groups that face labor market disadvantages compared to non-Latino whites, we expect the coefficients on the interaction terms to be negative. Asians and Caribbeans do not necessarily fare worse than non-Latino whites in the labor market, but they still may face challenges that non-Latino whites do not face, such as issues related to discrimination and other cultural and language factors. Thus, the sign of the interaction effect for these groups may be either positive or negative, or zero. We estimate Equation 1 taking into account the CPES' complex survey design (discussed in the next section). Equation 1 is estimated separately for males and females.

We emphasize that our approach highlights any racial/ethnic differences in the effects of psychiatric disorder on employment, but does not necessarily identify the mechanisms leading to such differences. We experiment with models that also include interactions between education and race/ethnicity, to capture any possible effects through education, but many other unmeasured channels remain.

The dependent variable in Equation 1 is binary. This indicates that using a nonlinear model, such as the logit or the probit, would be appropriate. However, we are primarily interested in the magnitude and statistical significance of the estimated interaction between race/ethnicity and mental disorder. As Ai & Norton (2003) point out, in a non-linear model, the sign of the coefficient on an interaction term and a standard t -test of this coefficient can provide misleading information regarding the interaction effect. To avoid this problem, we estimate linear probability models in which the interpretation of interaction effects is straightforward.³

Psychiatric disorders may be associated with unmeasured factors that also detract from employment, such as stressful life events, family problems, or low ability. Reverse causality is also possible, with employment outcomes affecting mental health.⁴ We do not directly address this endogeneity problem.⁵ However, we estimate Equation 1 with samples (males and

³We re-estimated all models using a probit and calculated the marginal effects ignoring this issue (thus, the interpretation of the coefficients is correct in all cases except for the interaction effects). These models led to virtually identical findings as the OLS models, even for the interaction effects.

females separately) that are limited to observations with a lifetime history of any psychiatric illness. Limiting the samples in this way reduces heterogeneity (since all individuals in the sample have experienced psychiatric illness in the past) and effectively limits our attention to the effect of onset of recent disorder, or a recurrence of illness, on current employment. While this approach does not address endogeneity directly (and does not address the problem of reverse causality at all), it is likely to limit the problem of unobserved heterogeneity to some extent.

The CPES Data

The CPES Combined Sample

The University of Michigan Survey Research Center (SRC) collected data for the NLAAS (NLAAS; Alegria et al., 2004), the N NCS Replication (NCS-R; Kessler & Merikangas, 2004) and the National Survey of African American Life (NSAL; Jackson et al., 2004) known as CPES studies (Hartley 1962, 1974). The sampling approach allowed for the creation of design-based analysis weights. Using these weights, the three data sets can be combined as though they are a single, nationally-representative study (NIMH, 2007).⁶

The CPES includes extensive epidemiological information on mental disorders and health services use in the general population with special emphasis on minority groups (Colpe et al., 2004). Interviews for the studies were conducted by professional interviewers from the SRC. As described in detail elsewhere (Heeringa et al., 2004), the NLAAS is a nationally-representative survey of adult household residents in the non-institutionalized Latino and Asian populations of the coterminous United States. The final sample included 2,554 Latinos and 2,095 Asian Americans. The weighted response rates were: 73.2% for the total sample; 75.5% for Latinos; and 65.6% for Asians (Alegria et al., 2004).

The NCS-R is a nationally representative sample with a response rate of 70.9%. Eligible respondents were English-speaking, non-institutionalized adults ages 18 or older living in civilian housing in the coterminous United States. The NCS-R was administered in two parts: [1] Part I was administered to all respondents and included core diagnostic assessments; [2] a subset of Part I respondents completed Part II of the survey which addressed service use, consequences, other correlates of psychiatric illness and additional disorders, with measures identical to those in the NLAAS.

The NSAL is also a nationally-representative survey of household residents in the non-institutionalized Black population that included 3,570 African Americans and 1,621 Black respondents of Caribbean descent. The NSAL had a response rate of 70.9% for the African American sample (Neighbors et al., 2007).

Analytic Samples and Measures

This paper is based on data from the pooled NLAAS/NCS-R/NSAL sample with Asians and Latinos from the NLAAS, non-Latino whites from the NCS-R Part II, and African-Americans and Afro-Caribbeans from the NSAL. Race/ethnicity categories were based on respondents' self-reports to questions based on U.S. Census categories. We consider the following race/ethnicity categories: Latino, African-American, Asian, and Afro-Caribbean, with non-Latino white as the baseline category. Of the 13,837 respondents in this sample, we excluded from

⁴The potential for reverse causality is possibly mitigated to some extent by the fact that employment status is measured as of the day of the survey while psychiatric disorder status pertains to the 12 months preceding the survey.

⁵In Chatterji, Alegria & Takeuchi (2008)2007 or different reference?, we estimate similar models and address the problem of endogeneity using bivariate probit models.

⁶ Design and methodological information can be found at the CPES website (<https://www.icpsr.umich.edu/CPES/index.html>).

the sample persons over 65 years old ($n = 1,474$), respondents with missing psychiatric disorder information ($n = 179$), and those with missing outcome information ($n = 1206$), leaving us with an analytic sample of 11,813 respondents (6,824 females and 4,989 males).⁷

Our dependent variable is a binary indicator of whether the respondent is currently employed for pay (full-time or part-time). This indicator was created from respondent's reply to his/her current work situation as of the day of the survey. Respondents who are not currently employed may be unemployed or out of the labor force.

In the NLAAS, NSAL and NCS-R, the presence of lifetime, 12-month psychiatric disorders and sub-threshold depressive disorder or minor depressive disorder was evaluated via the World Health Organization Composite International Diagnostic Interview (WMH-CIDI) (Kessler & Ustun, 2004). Diagnoses are based on DSM-IV diagnostic systems. The covariate of interest in our analysis is a dummy variable indicating whether or not the respondent meets DSM-IV diagnostic criteria for any mental disorders in the past year.⁸ We also consider an alternate set of models which, in place of the any disorder measure, include three dichotomous indicators of any affective disorder (major depression or dysthymia) in the past 12 months, any anxiety disorder (agoraphobia, social phobia, generalized anxiety disorder, panic disorder) in the past 12 months, and any substance disorder (alcohol abuse or dependence, drug abuse or dependence) in the past 12 months. In addition, the models are re-estimated using a sample limited to respondents who meet lifetime criteria for any of the fourteen disorders listed above (including if the currently meet diagnostic criteria).

The models include controls for: age in years; region (Midwest, South, West, with Northeast as the reference category); marital status (married, widowed/divorced/separated with single as the baseline); education (12 years, 13–15 years, 16+ years with less than 12 years as the baseline); number of living biological children; US citizen; nativity (immigrant); and indicators for lifetime chronic illness (dichotomous indicators for asthma, diabetes, cardiovascular disease, ulcers, cancer).

Results

Table 1 shows weighted descriptive statistics for the full samples (all males, all females) and for the samples limited to respondents with lifetime disorder (males with lifetime disorder, females with lifetime disorder). 84 percent of males are currently employed, while 79 percent of males with lifetime disorder are currently employed. Most males who are not employed are out of the labor force – among all males and males with lifetime disorder, only 3 percent of each sample is unemployed (not shown in table). Among females, 71 percent are currently employed, while 22 percent are out of the labor force; these statistics are similar in the female sample limited to respondents with a history of psychiatric disorder. About 7 percent of each female sample is currently unemployed (not shown in table).

In the full samples, 40 percent of males and 42 percent of females met diagnostic criteria for psychiatric disorder at some point during their lifetime. The 12-month rates of any disorder were 18 percent for males and 24 percent for females. Affective disorders (e.g., major depression) were the most common disorder: 11 percent of males and 17 percent of females met criteria for this disorder in the past 12 months. The 12-month prevalence of anxiety

⁷Note that there are some respondents who have missing values for more than one of these categories. For this reason, the sum of the categories is greater than the total number of respondents excluded from the sample.

⁸Any psychiatric disorder includes the following fourteen diagnoses: (1) major depression; (2) dysthymia; (3) agoraphobia; (4) generalized anxiety disorder (GAD); (5) panic attack; (6) panic disorder; (7) social phobia; (8) alcohol abuse; (9) alcohol dependence; (10) illicit drug abuse; (11) illicit drug dependence; (12) post-traumatic stress disorder; (13) anorexia; and (14) bulimia.

disorders was 7 percent among males, and 12 percent among females. These rates were much higher among men and women with a lifetime history of psychiatric disorder.

Tables 2a and 2b show descriptive statistics by racial/ethnic group for males (Table 2a) and females (Table 2b). Among males, 85 percent of non-Latino whites are employed, 80 percent of Latinos, 79 percent of African-Americans, 83 percent of Asians, and 85 percent of Caribbeans (Table 2a). Among females, 73 percent of non-Latino whites are employed, 56 percent of Latinos, 72 percent of African-Americans, 64 percent of Asians, and 81 percent of Caribbeans (Table 2b). For both males and females, unemployment rates are higher in all racial/ethnic minority groups compared to that of non-Latino whites.

Non-Latino whites have the highest rate of psychiatric disorder. Among non-Latino white men, 20 percent have experienced a psychiatric disorder in the past year, compared to 15 percent of Latinos, 13 percent of African-Americans, 9 percent of Asians, and 19 percent of Caribbeans (Table 2a). A similar pattern emerges for females – non-Latino whites have appreciably higher rates of 12-month disorder compared to racial/ethnic minorities.

In Table 3, we show results from OLS regressions in which a binary indicator of employment is the dependent variable. Our primary interest is in the coefficient of recent psychiatric disorder and the coefficients on the interactions between disorder and race/ethnicity. Column 1 shows findings for all males, column 2 shows findings for males with lifetime history of disorder, and columns 3 and 4 show findings for all females and females with lifetime disorder. Among all males and males with lifetime disorder, having a recent psychiatric disorder is associated with a 9 to 10 percentage point reduction in the likelihood of being employed. There does not appear to be racial/ethnic differences in this effect for any group aside from Caribbeans. The interaction between Caribbean ethnicity and mental disorder is positive, large in size, and statistically significant in both the all males and the males with lifetime disorder samples. We caution, however, that the number of Caribbean males with recent disorder is relatively small (about 45) so this finding is driven by a small number of observations.

The pattern of results for females is somewhat different from that of males. The main effect of disorder on employment is negative, small in magnitude and not statistically significant at the 0.05 level in the all females sample or the females with lifetime disorder sample. There are differences, however, between some racial/ethnic minority groups and non-Latino whites in how recent disorder affects the probability of employment. In particular, among Latino women, having a recent disorder reduces the probability of employment by 11 to 14 percentage points. Among African-American women, there is suggestive evidence of a larger effect of disorder on employment compared to non-Latino whites. The coefficient on the interaction between African-American and disorder is only marginally statistically significant in the all females sample, and not statistically significant at conventional levels in the females with lifetime disorder sample.

In sum, findings from Table 3 indicate that among males, mental disorders appreciably dampen the probability of employment among all racial/ethnic groups, with the possible exception of Caribbeans. Among females, the main effects of disorder on employment are much weaker overall, but we see large, negative effects specifically for Latinos. Other coefficients based on the full samples of men and women yield intuitive findings. The main effects of race/ethnicity on employment are negative for Latino, African-American, and Asian men, controlling for other factors. Among women, African-American and Caribbean women are more likely than non-Latino women to be employed, while Asian and Latino women are less likely than non-Latino women to be employed, controlling for other factors. Although not included in the tables, educational attainment is positively associated with employment, while chronic medical

conditions detract from employment for both males and females. Among females, being married and the number of children detract appreciably from the likelihood of employment.

In Table 4, we examine the main effects and interactions with race/ethnicity of three types of disorder – affective disorders (e.g. major depression), anxiety disorders, and substance disorders. As in Table 3, we show results for samples of all males, males with lifetime disorder, all females, and females with lifetime disorder. Three findings related to racial/ethnic differences are notable. First, among males, while the main effects of disorder on employment appear to be driven by anxiety and affective disorders, substance disorders also may have a large impact for Asians and African-Americans. Second, among males, the protective effect of Caribbean ethnicity appears to operate through affective disorders. However, we caution that when examining some interactions, cell sizes become small. Finally, among females, we see that affective disorders detract from employment for all racial/ethnic groups, but anxiety disorders detract from employment only for Latinos and possibly for African-Americans.

Conclusions

Prior research on the disability burden of mental disorders has focused on the non-Latino white population, despite the growing size and importance of racial/ethnic minorities in the labor market and in the US population as a whole. This paper is one of the first to test for racial/ethnic differences in the effects of mental disorder on employment outcomes. On one level, psychiatric illness is equally debilitating and stigmatizing regardless of race or ethnicity. On another level, psychiatric illness may be more debilitating or stigmatizing for racial and ethnic minority groups because it represents a double stigma (minority plus psychiatric illness), or because racial/ethnic minorities have unmeasured disadvantages in the labor market.

We find a consistent pattern for males – recent psychiatric disorder is associated with a large reduction in the likelihood of employment for all racial/ethnic groups with the possible exception of Caribbeans. These findings are driven by anxiety and affective disorders. For females, only affective disorders appear to detract from employment overall, but we see much larger negative effects specifically for Latino (and possibly African-American) women with anxiety disorders. Thus, the paper supports the idea that the effect of race/ethnicity is more nuanced than these two competing hypotheses - but probably more supportive of the notion that psychiatric disorder is equally debilitating across racial and ethnic groups.

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Table 1

Weighted means and standard errors (in italics)

	Males (mean, <i>se</i>)	Males with lifetime disorder (mean, <i>se</i>)	Females (mean, <i>se</i>)	Females with lifetime disorder (mean, <i>se</i>)
Employed	0.84 <i>0.01</i>	0.79 <i>0.01</i>	0.71 <i>0.01</i>	0.70 <i>0.01</i>
Out of labor force	0.13 <i>0.01</i>	0.18 <i>0.01</i>	0.22 <i>0.01</i>	0.23 <i>0.01</i>
Any lifetime disorder	0.59 <i>0.01</i>	1.00 <i>0.00</i>	0.42 <i>0.01</i>	1.00 <i>0.00</i>
Any disorder in past 12 months	0.18 <i>0.01</i>	0.47 <i>0.01</i>	0.24 <i>0.01</i>	0.56 <i>0.01</i>
Affective disorder in past 12 months	0.11 <i>0.01</i>	0.28 <i>0.01</i>	0.17 <i>0.01</i>	0.40 <i>0.01</i>
Anxiety disorder in past 12 months	0.07 <i>0.00</i>	0.19 <i>0.01</i>	0.12 <i>0.01</i>	0.27 <i>0.01</i>
Substance use disorder in past 12 months	0.06 <i>0.01</i>	0.15 <i>0.01</i>	0.02 <i>0.00</i>	0.06 <i>0.01</i>
Latino	0.14 <i>0.01</i>	0.11 <i>0.01</i>	0.12 <i>0.01</i>	0.09 <i>0.01</i>
African-American	0.12 <i>0.01</i>	0.10 <i>0.01</i>	0.13 <i>0.01</i>	0.11 <i>0.01</i>
Asian	0.04 <i>0.00</i>	0.02 <i>0.00</i>	0.04 <i>0.00</i>	0.02 <i>0.00</i>
Caribbean	0.01 <i>0.00</i>	0.01 <i>0.00</i>	0.01 <i>0.00</i>	0.00 <i>0.00</i>
12 years of education	0.32 <i>0.02</i>	0.33 <i>0.02</i>	0.29 <i>0.01</i>	0.29 <i>0.02</i>
13–15 years of education	0.27 <i>0.01</i>	0.27 <i>0.01</i>	0.30 <i>0.01</i>	0.31 <i>0.01</i>
16+ years of education	0.25 <i>0.01</i>	0.22 <i>0.02</i>	0.26 <i>0.01</i>	0.26 <i>0.02</i>
Age	39.79 <i>0.41</i>	39.95 <i>0.27</i>	40.68 <i>0.43</i>	40.34 <i>0.35</i>
Midwest	0.24 <i>0.02</i>	0.27 <i>0.02</i>	0.23 <i>0.02</i>	0.24 <i>0.02</i>
South	0.52 <i>0.02</i>	0.27 <i>0.02</i>	0.34 <i>0.03</i>	0.32 <i>0.03</i>
West	0.24 <i>0.02</i>	0.26 <i>0.03</i>	0.24 <i>0.02</i>	0.24 <i>0.03</i>
Married	0.63 <i>0.01</i>	0.55 <i>0.02</i>	0.60 <i>0.01</i>	0.55 <i>0.02</i>
Divorced or widowed	0.24 <i>0.01</i>	0.26 <i>0.01</i>	0.21 <i>0.01</i>	0.21 <i>0.01</i>
US citizen	0.92 <i>0.01</i>	0.96 <i>0.01</i>	0.93 <i>0.01</i>	0.96 <i>0.01</i>
Immigrant	0.14 <i>0.01</i>	0.08 <i>0.01</i>	0.14 <i>0.01</i>	0.08 <i>0.01</i>
Number of children	1.57 <i>0.04</i>	1.50 <i>0.05</i>	1.81 <i>0.04</i>	1.73 <i>0.04</i>
Arthritis	0.17 <i>0.01</i>	0.21 <i>0.01</i>	0.24 <i>0.01</i>	0.28 <i>0.01</i>
Stroke	0.02 <i>0.00</i>	0.02 <i>0.00</i>	0.02 <i>0.00</i>	0.02 <i>0.00</i>
Heart attack	0.03 <i>0.00</i>	0.05 <i>0.01</i>	0.02 <i>0.00</i>	0.02 <i>0.00</i>
Diabetes	0.06 <i>0.01</i>	0.06 <i>0.01</i>	0.06 <i>0.01</i>	0.06 <i>0.01</i>
Ulcer	0.09 <i>0.01</i>	0.12 <i>0.01</i>	0.09 <i>0.01</i>	0.14 <i>0.01</i>
Cancer	0.03 <i>0.00</i>	0.03 <i>0.00</i>	0.05 <i>0.01</i>	0.06 <i>0.01</i>
Smoker	0.30 <i>0.01</i>	0.40 <i>0.01</i>	0.23 <i>0.01</i>	0.32 <i>0.01</i>

Table 2

Table 2a: Weighted means and standard errors (in italics) by race/ethnicity: Males										
	Non-Latino Whites	Latinos	African-Americans	Asians	Caribbeans					
Employed	0.85	0.01	0.80	0.02	0.79	0.02	0.83	0.01	0.85	0.03
Out of labor force	0.13	0.01	0.12	0.01	0.10	0.01	0.11	0.01	0.07	0.02
Any lifetime disorder	0.43	0.01	0.29	0.02	0.32	0.02	0.18	0.02	0.30	0.07
Any disorder in past 12 months	0.20	0.01	0.15	0.01	0.13	0.01	0.09	0.01	0.19	0.07
Anxiety disorder in past 12 months	0.13	0.01	0.08	0.01	0.07	0.01	0.06	0.01	0.11	0.05
Affective disorder in past 12 months	0.08	0.01	0.07	0.01	0.05	0.01	0.05	0.01	0.11	0.04
Substance use disorder in past 12 months	0.06	0.01	0.05	0.01	0.05	0.01	0.02	0.01	0.07	0.05
12 years of education	0.32	0.02	0.26	0.01	0.42	0.02	0.19	0.02	0.31	0.04
13-15 years of education	0.29	0.02	0.21	0.02	0.24	0.02	0.21	0.02	0.24	0.03
16+ years of education	0.28	0.02	0.10	0.01	0.14	0.02	0.47	0.03	0.24	0.02
Age	41.00	0.56	35.04	0.50	39.05	0.56	38.45	0.53	38.50	0.59
Midwest	0.30	0.03	0.08	0.02	0.16	0.01	0.11	0.03	0.05	0.02
South	0.29	0.03	0.31	0.04	0.58	0.03	0.07	0.02	0.32	0.05
West	0.20	0.03	0.44	0.04	0.10	0.01	0.67	0.04	0.14	0.04
Married	0.64	0.02	0.70	0.02	0.50	0.02	0.70	0.03	0.61	0.04
Divorced or widowed	0.23	0.02	0.23	0.01	0.32	0.02	0.25	0.02	0.30	0.03
US citizen	0.99	0.00	0.60	0.02	0.97	0.01	0.67	0.03	0.66	0.05
Immigrant	0.02	0.01	0.60	0.02	0.04	0.01	0.76	0.03	0.69	0.08
Number of children	1.43	0.05	1.67	0.06	2.37	0.05	1.28	0.07	2.21	0.11
Arthritis	0.20	0.01	0.09	0.01	0.13	0.01	0.10	0.01	0.11	0.05
Stroke	0.02	0.00	0.01	0.00	0.02	0.01	0.00	0.00	0.03	0.02
Heart attack	0.03	0.01	0.02	0.00	0.06	0.01	0.01	0.01	0.14	0.05
Diabetes	0.06	0.01	0.06	0.01	0.08	0.01	0.04	0.01	0.05	0.01
Ulcer	0.10	0.01	0.04	0.01	0.08	0.01	0.05	0.01	0.06	0.03
Cancer	0.04	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.01	0.00
Smoker	0.31	0.01	0.27	0.01	0.34	0.02	0.22	0.02	0.21	0.03

Table 2b: Weighted means and standard errors (in italics) by race/ethnicity: Females										
	Non-Latino Whites	Latinos	African-Americans	Asians	Caribbeans					
Employed	0.73	0.01	0.56	0.02	0.72	0.02	0.64	0.02	0.81	0.03
Out of labor force	0.21	0.01	0.35	0.02	0.16	0.01	0.27	0.02	0.08	0.01
Any lifetime disorder	0.47	0.01	0.32	0.02	0.35	0.01	0.19	0.02	0.25	0.02
Any disorder in past 12 months	0.26	0.01	0.18	0.01	0.20	0.01	0.11	0.01	0.14	0.02
Anxiety disorder in past 12 months	0.19	0.01	0.12	0.01	0.15	0.01	0.08	0.01	0.10	0.02
Affective disorder in past 12 months	0.13	0.01	0.11	0.01	0.09	0.01	0.06	0.01	0.06	0.01
Substance use disorder in past 12 months	0.03	0.00	0.01	0.00	0.02	0.00	0.01	0.00	0.01	0.00
12 years of education	0.30	0.02	0.24	0.01	0.37	0.01	0.16	0.02	0.28	0.04
13-15 years of education	0.32	0.02	0.22	0.02	0.26	0.01	0.28	0.02	0.31	0.05
16+ years of education	0.30	0.02	0.11	0.01	0.14	0.01	0.40	0.02	0.22	0.01
Age	41.87	0.57	36.39	0.51	38.98	0.42	39.28	0.55	38.64	0.53
Midwest	0.28	0.03	0.08	0.02	0.19	0.02	0.09	0.02	0.01	0.00
South	0.31	0.04	0.30	0.05	0.56	0.02	0.09	0.02	0.30	0.04
West	0.21	0.03	0.42	0.05	0.09	0.01	0.66	0.04	0.06	0.01
Married	0.62	0.02	0.63	0.02	0.38	0.01	0.73	0.02	0.45	0.02
Divorced or widowed	0.19	0.01	0.20	0.02	0.35	0.02	0.18	0.01	0.30	0.02
US citizen	0.99	0.00	0.60	0.03	0.99	0.00	0.69	0.03	0.74	0.02
Immigrant	0.03	0.01	0.59	0.03	0.02	0.00	0.79	0.03	0.65	0.04
Number of children	1.63	0.06	2.15	0.06	2.46	0.04	1.57	0.08	2.32	0.13
Arthritis	0.26	0.02	0.17	0.01	0.22	0.01	0.15	0.02	0.12	0.03
Stroke	0.02	0.00	0.01	0.00	0.02	0.00	0.01	0.00	0.03	0.02
Heart attack	0.01	0.00	0.01	0.00	0.07	0.01	0.01	0.00	0.05	0.02

Table 2b: Weighted means and standard errors (in italics) by race/ethnicity: Females

	Non-Latino Whites	Latinos	African-Americans	Asians	Caribbeans
Diabetes	0.05	<i>0.07</i>	<i>0.08</i>	<i>0.07</i>	<i>0.11</i>
Ulcer	0.10	<i>0.07</i>	<i>0.06</i>	<i>0.07</i>	<i>0.09</i>
Cancer	0.06	<i>0.07</i>	<i>0.02</i>	<i>0.07</i>	<i>0.03</i>
Smoker	0.26	<i>0.07</i>	<i>0.14</i>	<i>0.02</i>	<i>0.26</i>
				<i>0.07</i>	<i>0.08</i>
				<i>0.07</i>	<i>0.10</i>
				<i>0.06</i>	<i>0.06</i>
				<i>0.02</i>	<i>0.05</i>
				<i>0.00</i>	<i>0.05</i>
				<i>0.08</i>	<i>0.10</i>
				<i>0.07</i>	<i>0.04</i>

Table 3

Racial/ethnic differences in effect of any recent mental disorder on employment OLS coefficient (T-statistic)

	(1) All males	(2) Males with lifetime disorder	(3) All females	(4) Females with lifetime disorder
Any disorder in past 12 months	-0.10 (-4.16)	-0.09 (-2.88)	-0.02 (-1.04)	-0.04 (-1.61)
Latino	-0.11 (-4.09)	-0.08 (-2.29)	-0.05 (-1.72)	-0.09 (-1.83)
Latino * any disorder in past 12 months	0.01 (0.22)	-0.02 (-0.38)	-0.14 (-3.29)	-0.11 (-2.21)
African-American	-0.06 (-2.71)	-0.02 (-0.41)	0.06 (2.68)	0.03 (0.77)
African-American* any disorder in past 12 months	0.02 (0.35)	0.01 (0.12)	-0.06 (-1.66)	-0.04 (-0.94)
Asian	-0.11 (-5.17)	-0.16 (-2.98)	-0.11 (-2.59)	-0.22 (-3.24)
Asian* any disorder in past 12 months	-0.05 (-0.73)	-0.03 (-0.37)	-0.04 (-0.46)	0.06 (0.62)
Caribbean	-0.05 (-1.41)	-0.07 (-1.24)	0.11 (2.18)	0.12 (3.50)
Caribbean* any disorder in past 12 months	0.16 (2.11)	0.26 (2.81)	-0.02 (-0.16)	-0.05 (-0.64)

Notes: Results shown come from a linear probability model in which a binary indicator of current employment is the dependent variable. Covariates not shown: education, age, region, marital status, US citizen, immigrant, number of children, chronic conditions, and smoker. The regression accounts for complex survey design. The table shows estimated coefficients and *t*-statistics in parentheses.

Table 4

Racial/ethnic differences in effects of recent affective, anxiety, and substance use disorders on employment OLS coefficient (T-statistic)

	All males	Males with lifetime disorder	All females	Females with lifetime disorder
Anxiety disorder in past 12 months	-0.10 (-3.21)	-0.08 (-2.51)	0.01 (0.35)	0.00 (-0.08)
Affective disorder in past 12 months	-0.15 (-3.23)	-0.14 (-2.86)	-0.07 (-2.67)	-0.08 (-3.29)
Substance use disorder in past 12 months	0.04 (0.92)	0.05 (0.92)	-0.03 (-0.38)	-0.04 (-0.54)
Latino	-0.10 (-4.03)	-0.07 (-2.13)	-0.06 (-1.90)	-0.11 (-2.19)
Latino*anxiety disorder in past 12 months	0.06 (0.94)	0.04 (0.51)	-0.20 (-3.90)	-0.17 (-3.04)
Latino*affective disorder in past 12 months	0.00 (-0.05)	-0.02 (-0.25)	0.08 (1.23)	0.12 (1.53)
Latino*substance disorder in past 12 months	-0.09 (-1.08)	-0.09 (-1.03)	-0.16 (-0.99)	-0.15 (-0.91)
African-American	-0.06 (-2.87)	-0.03 (-0.75)	0.05 (2.55)	0.01 (0.32)
African-American*anxiety disorder in past 12 months	0.08 (1.50)	0.07 (1.20)	-0.07 (-1.84)	-0.05 (-1.18)
African-American*affective disorder in past 12 months	0.09 (0.91)	0.09 (0.83)	0.04 (0.92)	0.06 (1.30)
African-American*substance disorder in past 12 months	-0.14 (-1.82)	-0.11 (-1.37)	-0.08 (-0.71)	-0.06 (-0.57)
Asian	-0.11 (-5.13)	-0.16 (-2.97)	-0.11 (-2.71)	-0.24 (-3.48)
Asian*anxiety disorder in past 12 months	0.16 (1.87)	0.18 (1.84)	-0.02 (-0.19)	0.07 (0.56)
Asian*affective disorder in past 12 months	-0.02 (-0.25)	-0.02 (-0.21)	0.07 (0.54)	0.14 (1.12)
Asian*substance disorder in past 12 months	-0.41 (-4.10)	-0.37 (-4.00)	-0.18 (-0.70)	-0.15 (-0.59)
Caribbean	-0.04 (-1.31)	-0.04 (-0.67)	0.11 (2.25)	0.12 (3.20)
Caribbean*anxiety disorder in past 12 months	-0.13 (-1.16)	-0.12 (-1.14)	-0.06 (-0.39)	-0.11 (-0.92)
Caribbean*affective disorder in past 12 months	0.36 (3.72)	0.41 (3.76)	0.06 (0.84)	0.05 (0.61)
Caribbean*substance disorder in past 12 months	0.08 (0.83)	0.20 (1.84)	-0.01 (-0.05)	0.04 (0.20)

Notes: Results shown come from a linear probability model in which a binary indicator of current employment is the dependent variable. Covariates not shown: education, age, region, marital status, US citizen, immigrant, number of children, chronic conditions, and smoker. The regression accounts for complex survey design. The table shows estimated coefficients and *t*-statistics in parentheses.