

Prevalence of lifetime DSM-IV affective disorders among older African Americans, Black Caribbeans, Latinos, Asians and Non-Hispanic White people

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Objectives: The purpose of this study is to estimate lifetime prevalence of seven psychiatric affective disorders for older non-Hispanic White people, African Americans, Caribbean Black people, Latinos, and Asian Americans and examine demographic, socioeconomic, and immigration correlates of those disorders.

Design: Data are taken from the older sub-sample of the Collaborative Psychiatric Epidemiology Surveys. Selected measures of lifetime DSM-IV psychiatric disorders were examined (i.e., panic disorder, agoraphobia, social phobia, generalized anxiety disorder, post-traumatic stress disorder, major depressive disorder, and dysthymia).

Setting: Community epidemiologic survey.

Participants: Nationally representative sample of adults 55 years and older ($n = 3046$).

Measurements: Disorders were assessed using the DSM-IV World Mental Health Composite International Diagnostic Interview.

Results: Major depressive disorder and social phobia were the two most prevalent disorders among the seven psychiatric conditions. Overall, non-Hispanic White people and Latinos consistently had higher prevalence rates of disorders, African Americans had lower prevalence of major depression and dysthymia, and Asian Americans were typically less likely to report affective disorders than those of their counterparts. There is variation across groups in the association of demographic, socioeconomic, and immigration variables with disorders.

Conclusions: This study furthers our understanding of the racial and ethnic differences in the prevalence of DSM-IV disorders among older adults and the correlates of those disorders. It highlights the importance of examining both between-group and within-group differences in disorders and the complexity of the mechanisms associated with differences across groups. Findings from this study underscore the need for future research that more clearly delineates subgroup differences and similarities. Copyright © 2011 John Wiley & Sons, Ltd.

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Objective

Previous epidemiological studies have provided insight into symptoms of depression and anxiety among older

adults through symptom checklist measures. These studies find that symptoms decline over time although older adults experience significant impairment (Ramsawh *et al.*, 2009), and symptoms of depression and anxiety

increase again after the mid-1970s (Teachman, 2006). Depressive and anxiety symptoms are associated with increased disability particularly among older adults (Brenes *et al.*, 2008), and persistent depressive symptoms are associated with cognitive deficits in older adults over time (Mojtabai and Olfson, 2004). Furthermore, White people have higher levels of symptoms than other groups, both across age groups and among older adults (Cohen *et al.*, 2006; Mehta *et al.*, 2003).

Large nationally representative datasets build on this research by examining the full range of diagnostic categories and including older adults who meet criteria for disorders but have not used mental health services or received mental health treatment. Similar to symptom-based research, studies of this type have found that the prevalence of depressive and anxiety disorders declines with age (Scott *et al.*, 2008; Hasin *et al.*, 2005; Grant *et al.*, 2005; Mojtabai and Olfson, 2004) even when controlling for comorbid physical illness or pain (Scott *et al.*, 2008). In fact, adults 65 years and older have the lowest prevalence of disorders including major depression (Hasin *et al.*, 2005; Mojtabai and Olfson, 2004), and generalized anxiety (Grant *et al.*, 2005). Psychiatric disorders are associated with functional decline (Callahan *et al.*, 2005), and poor physical functioning and illness (Cohen *et al.*, 2006; Lyness *et al.*, 2006). As observed in studies focusing on symptoms, White people have higher prevalence of mood and anxiety disorders compared with other racial/ethnic groups. However, the variability in prevalence across specific disorders and racial/ethnic groups is complex (Smith *et al.*, 2006; Hasin *et al.*, 2005; Grant *et al.*, 2005) with the lower lifetime risk for ethnic groups compared with White people stemming from a small subset of disorders and beginning early in life (Breslau *et al.*, 2006).

This study builds on this body of research as well as recent studies using data from the Collaborative Psychiatric Epidemiology Surveys (CPES) (Ford *et al.*, 2007; Jimenez *et al.*, 2010; González *et al.*, 2010) to investigate differences in the prevalence of DSM-IV disorders in a national sample of five racial/ethnic groups 55 years and older.

Using data from the NSAL, a subset of the CPES, Ford *et al.* (2007) found that 23% of African Americans 55 years and older met diagnostic criteria for one lifetime disorder, and 8.5% met criteria for a 12-month disorder. Alcohol abuse, PTSD, and major depression were most prevalent, and those older adults 55–64 years had the highest prevalence whereas those 75 years and older the lowest. The present study extends this work to include both between-group and within-group analysis of older non-Hispanic White people,

African Americans, Black Caribbeans, Asian Americans, and Latinos.

Consistent with previous studies, Jimenez *et al.* (2010) found that White people 60 years and older in the CPES data had significantly higher prevalence for several lifetime disorders compared with Asian Americans, African Americans, and Black Caribbeans. White people did not differ significantly from Latinos, however, in terms of lifetime prevalence, and there were no differences across racial/ethnic groups in the prevalence of 12-month disorders. The work of Jimenez *et al.* (2010) also enhances our understanding of the relationship between immigration and diagnosis among older adults. In particular, their finding that the prevalence of disorders did not differ between older adults born in the USA and immigrants is contrary to what has been reported in previous studies (Ortega *et al.*, 2000; Alegría *et al.*, 2008). Similarly, González *et al.* (2010) found that the prevalence of major depressive disorder was greater for US *versus* foreign-born respondents, except for foreign-born respondents 65 years and older. Neither Jimenez *et al.* nor González *et al.* examine demographic and socioeconomic correlates. The present study builds on their work by examining the prevalence of selected psychiatric disorders in conjunction with demographic, socioeconomic, and immigration factors, both across and within five racial/ethnic groups of older adults.

Methods

Sample

This study utilizes data from three surveys that comprise the CPES, which include data about the prevalence of mental disorders, their associated impairments, and their treatment in a representative sample of the adult population in the USA. Non-Hispanic White people in our study are from the National Comorbidity Survey Replication (NCS-R), African Americans and Black Caribbeans are from the National Survey of American Life (NSAL), and Latinos and Asian Americans are from the National Latino and Asian American Study (NLAAS). Data for each survey were collected in face-to-face interviews by the Institute for Social Research at the University of Michigan between February 2001 and November 2003. The CPES surveys share the multistage area probability sample designs common to the national surveys conducted by the Survey Research Center (Heeringa *et al.*, 2004; Pennell *et al.*, 2004). In addition, the surveys share a common set of objectives and instrumentation and were designed to allow

integration of design-based analysis weights to combine data sets as though they were a single, nationally representative study (Heeringa & Berglund, 2007). Final response rates for the CPES surveys two-phase sample designs were computed using the American Association of Public Opinion Research (AAPOR) guidelines for Response Rate 3 (American Association for Public Opinion Research, 2006) and range from 70.9% for the NCS-R to 73.2% for the NLAAS. (See Heeringa *et al.*, 2004 for a more detailed discussion of the CPES samples). The analytic samples for this study are adults from the CPES who are 55 years and over ($n = 3046$).

Measures

Diagnostic assessment. The CPES surveys used the World Mental Health Composite International Diagnostic Interview (WMH-CIDI), a fully structured diagnostic interview used to assess mental disorders. The WMH-CIDI is an expanded version of the World Health Organization CIDI that includes expanded diagnostic sections as well as a greater number of disorders (Kessler and Üstün, 2004). The mental disorders examined in the present analysis include anxiety disorders (panic disorder, agoraphobia, social phobia, generalized anxiety disorder, posttraumatic stress disorder) and mood disorders (major depressive disorder, dysthymia). Bipolar disorder was excluded because it was not assessed in the NLAAS.

Covariates. The main predictor of interest is race/ethnicity (non-Hispanic White, African American, Black Caribbean, Asian, or Latino) determined by self-report at the time of household screening. Covariates include age, gender, and education (fewer than 12 years, 12 years, or 13 years or more of education). Household income was measured by a three-category variable, which indexes income to the poverty line based on 2001 Census data. Measures of employment status (employed, not employed) and marital status (married, not married) are dichotomized whereas region is measured by a four-category variable (Northeast, Midwest, South, or West).

Analysis strategy. Cross-tabulations illustrate differences across racial and ethnic groups in demographic, socioeconomic, and immigration factors as well as prevalence of disorders. Percentages are weighted based on the distribution of the racial and ethnic groups in the population. The standard errors reflect the recalculation of variance using the study's complex design.

Design-corrected F statistics were used to test differences between race/ethnic groups. Predicted prevalence estimates of affective disorder were calculated for each racial/ethnic group, adjusting for age, gender, employment status, poverty-income level, education, marital status, region, and nativity. Multivariate logistic regression models predict the association of covariates with the odds of having a mood or anxiety disorder. All analyses were conducted with SUDAAN 10.0 using the Taylor linearization method for calculating the complex design-based estimates of variance. A p -value < 0.05 was considered statistically significant.

Results

Demographic characteristics of the sample are presented in Table 1. A higher proportion of Caribbean Black people are in the youngest age group (52.1%) compared with the other racial and ethnic groups, whereas a higher proportion of non-Hispanic White people are 75 years or older (28.3%). Consistent with most samples of older adults, there are slightly more women than men with the exception of Caribbean Black people, the youngest of the five groups, for whom the percentage of men and women is equal. Asian Americans have the highest level of education (51.8% with ≥ 13 years of education), whereas Latinos have the lowest level of education (64.5% with < 12 years). Consistent with their younger ages, more than half of Caribbean Black people were employed at the time of the interview (58.7%). A higher proportion of Latinos (18.8%) and Asians (17.7%) have incomes below the poverty level compared with the other groups. More African Americans (55.9%) and Caribbean Black people (47.9%) have incomes 100 to 300% of poverty level whereas a higher proportion of White people (63.7%) have incomes at or greater than 300% of poverty level. More Asian Americans are married (76.8%) followed by non-Hispanic White people (63.2%). African Americans have the lowest proportion of married persons (40.4%). A higher proportion of Caribbean Black people (48.5%) live in the Northeastern USA whereas more African Americans (56%) live in the South. More Asians (74.8%) live in the Western USA. White people and African Americans are almost entirely US-born whereas 28.3% of Caribbean Black people, 36.7% of Latinos, and 21.1% of Asians were born in the USA. Among those who were foreign-born, most have lived in the USA for 20 years or more, with a higher proportion of Asians having lived in the USA for less than 20 years. More Latinos (60.5%) were less than

Table 1 Characteristics of 3046 adults 55 years and older by race/ethnicity from the Collaborative Psychiatric Epidemiology Surveys, 2001-2003

	Non-Hispanic White		African American		Caribbean Black		Latino American		Asian American		<i>p</i> -value ^b
	<i>n</i> = 1130		<i>n</i> = 780		<i>n</i> = 262		<i>n</i> = 498		<i>n</i> = 376		
	% ^a	SE	%	SE	%	SE	%	SE	%	SE	
Age group, %											
55–64 years	40.0	2.5	47.4	2.1	52.1	5.6	46.0	3.6	46.7	3.7	< 0.001
65–74 years	31.7	2.3	36.7	2.3	39.8	5.3	35.7	3.4	36.3	3.7	0.462
75+ years	28.3	1.9	16.0	1.6	8.2	2.1	18.3	2.3	17.1	1.7	< 0.001
Female, %	56.4	2.1	59.3	1.8	50.4	5.4	56.0	3.1	54.8	2.6	< 0.001
Education, %											
< 12 years	22.1	2.2	38.4	2.2	36.1	5.5	64.5	3.2	28.5	3.0	< 0.001
12 years	35.1	2.2	31.8	2.0	31.3	3.7	15.8	2.1	19.8	2.5	< 0.001
≥ 13 years	42.8	2.4	29.8	2.4	32.6	5.6	19.7	2.4	51.8	3.4	< 0.001
Employed, %	34.2	1.5	33.9	2.7	58.7	4.2	27.6	3.6	39.8	4.1	< 0.001
Poverty-income level, %											
< 100% poverty	3.9	0.7	5.9	1.1	3.0	0.9	18.8	2.2	17.7	2.4	
100–300% poverty	32.4	1.9	55.9	2.6	47.9	3.9	41.4	3.6	27.6	2.6	
≥ 300% poverty	63.7	1.8	38.2	2.5	49.1	3.9	39.9	3.4	54.7	3.6	< 0.001
Married/partner, %	63.2	1.8	40.4	2.3	54.6	7.0	57.8	2.9	76.8	2.8	< 0.001
Region, %											
Northeast	22.2	3.9	15.7	2.1	48.5	8.3	20.6	2.8	13.8	7.2	
Midwest	28.3	3.0	19.3	2.8	8.0	2.2	7.6	2.5	3.5	2.0	
South	30.9	3.8	56.0	3.2	36.4	9.8	38.6	5.4	8.0	2.2	
West	18.6	3.0	9.0	2.3	7.1	3.4	33.2	4.9	74.8	7.3	< 0.001
US-born, %	94.9	1.1	97.0	0.7	28.3	6.0	36.7	4.5	21.1	5.8	< 0.001
Among foreign-born only:											
Years in the USA, %											
< 10 years	n/a		n/a		7.8	2.9	9.6	2.0	21.2	2.5	
11 – <20 years	n/a		n/a		17.6	3.0	8.5	1.8	25.8	2.9	
≥ 20 years	n/a		n/a		74.3	4.6	80.6	2.7	53.1	4.4	
Age < 35 years at immigration, %	n/a		n/a		42.8	4.5	60.5	4.1	30.5	4.8	< 0.001

^aWeighted percentage and standard error (SE) adjusted for complex survey design. Percentages may not total 100 because of rounding.

^bAdjusted Wald *F*-Test.

35 years old at immigration compared with Caribbean Black people (42.8%) and Asians (30.5%).

Table 2 presents the predicted prevalence of lifetime DSM-IV affective disorders by race and ethnicity adjusting for age, gender, employment status, poverty-income level, education, marital status, region, and nativity. Overall, non-Hispanic White people (23.5%) and Latinos (22.8%) have the highest prevalence of any affective disorder, whereas Asian Americans (12.3%) and African Americans (13.7%) have the lowest prevalence, and Caribbean Black people fall in between (17.5%). This pattern is true for one affective disorder, or two or more disorders.

Non-Hispanic White people have the highest prevalence of any anxiety disorder (16.8%) followed by Latinos (15.2%). A smaller proportion of Asian Americans have any anxiety disorder (7.9%) whereas African Americans and Caribbean Black people have similar prevalence (11.0 vs 11.5%, respectively). Non-Hispanic White people and Latinos also have the highest prevalence for social phobia and generalized anxiety disorder.

With regard to mood disorders, Latinos (13.9%) and non-Hispanic White people (13.8%) had the highest prevalence of any mood disorder followed by Caribbean Black people (11.2%). African Americans (5.4%) and Asian Americans (6.4%) had the lowest prevalence. This pattern is largely caused by differences in the prevalence of major depressive disorder.

Table 3 presents odds ratios and 95% confidence intervals for logistic regression models of any lifetime mood or anxiety disorder. Results are presented with both non-Hispanic White people and African Americans (the two largest groups) as the reference group for race/ethnicity. Compared with African Americans, White people and Latinos were more likely to meet criteria for a mood or anxiety disorder. No other groups differed significantly compared with White people. Older age cohorts were less likely to meet criteria for either a mood or anxiety disorder, and men were less likely than women to have a disorder. Respondents who were not working were more likely to have a disorder, and those who were not married were more likely to have a disorder compared

Table 2 Adjusted predicted prevalence of lifetime CIDI/DSM affective disorders in 3046 adults 55 years and older by race/ethnicity, CPES

	Non-Hispanic White <i>n</i> = 1130			African American <i>n</i> = 780			Caribbean Black <i>n</i> = 262			Latino American <i>n</i> = 498			Asian American <i>n</i> = 376			<i>p</i> -value ^b
	%	SE	N ^a	%	SE	N	%	SE	N	%	SE	N	%	SE	N	
Anxiety disorders																
Panic disorder	3.0	0.6	61	1.5	0.5	15	2.0	1.5	3	2.5	1.4	16	1.2	0.7	6	0.325
Agoraphobia without panic	1.7	0.4	36	1.4	0.4	15	2.0	1.2	4	1.8	0.8	18	0.6	0.4	5	0.571
Social phobia	8.0	0.6	166	4.0	0.8	35	1.6	0.7	8	5.6	1.9	31	2.0	0.8	9	<0.001
Generalized anxiety disorder	7.1	1.0	156	2.4	0.5	24	3.6	2.5	4	6.2	1.4	39	2.6	1.0	10	<0.001
Posttraumatic stress disorder	4.6	0.6	83	4.5	0.9	46	3.0	1.3	9	2.1	0.7	22	2.0	1.1	6	0.148
Any anxiety disorder	16.8	1.3	340	11.0	1.4	102	11.5	4.0	26	15.2	2.3	89	7.9	1.8	31	0.001
Mood disorders																
Major depressive disorder	13.2	1.3	267	5.1	0.8	53	10.4	5.1	15	12.7	2.5	83	6.3	1.7	24	<0.001
Dysthymia	3.2	0.6	57	1.3	0.4	16	2.3	1.4	4	3.3	0.9	27	2.2	1.1	7	0.099
Any mood disorder	13.8	1.4	278	5.4	0.8	55	11.2	5.1	17	13.9	2.6	91	6.4	1.6	25	<0.001
Any affective disorder	23.5	1.6	480	13.7	1.5	130	17.5	4.9	36	22.8	2.8	136	12.3	2.3	48	<0.001
One affective disorder	13.6	1.0	277	9.3	1.4	80	12.5	4.4	28	14.4	2.2	72	9.2	1.8	35	0.032
Two or more affective disorders	10.0	1.2	203	4.4	0.6	50	5.2	3.6	8	8.4	1.7	64	3.2	1.2	13	<0.001

CIDI, Composite International Diagnostic Interview; DSM, Diagnostic and Statistical Manual; CPES, Collaborative Psychiatric Epidemiology Surveys.

Predicted prevalence estimates calculated from logistic regression models for any lifetime affective disorder associated with race/ethnicity, adjusted for age, gender, employment status, poverty-income level, education, marital status, region, and nativity.

Estimates for OCD and bipolar disorder are unavailable.

^aWeighted %, standard error (SE), and unweighted sample size (N).

^bAdjusted Wald *F*-test.

Table 3 Multivariate-adjusted odds ratios for any lifetime CIDI/DSM mood or anxiety disorder associated with selected demographics

	Mood disorders		Anxiety disorders	
	OR	95% CI	OR	95% CI
Race/ethnicity				
African American as reference	1.00		1.00	
White	2.99	2.07–4.31	1.78	1.27–2.49
Caribbean Black	3.17	1.00–10.08	1.70	0.71–4.07
Latino	3.91	2.11–7.24	2.21	1.29–3.79
Asian	1.61	0.78–3.33	1.09	0.53–2.22
<i>p</i> -value ^a	< 0.001		0.001	
White as reference				
African American	0.33	0.23–0.48	0.56	0.40–0.79
Caribbean Black	1.06	0.34–3.28	0.95	0.41–2.24
Latino	1.31	0.74–2.32	1.24	0.75–2.07
Asian	0.54	0.28–1.02	0.61	0.32–1.18
<i>p</i> -value	< 0.001		0.001	
Age				
55–64	1.00		1.00	
65–74	0.57	0.40–0.83	0.48	0.36–0.64
75+	0.24	0.15–0.36	0.22	0.13–0.38
<i>p</i> -value	< 0.001		< 0.001	
Gender				
Female	1.00		1.00	
Male	0.50	0.37–0.69	0.68	0.51–0.91
<i>p</i> -value	< 0.001		0.009	
Education				
< High school	0.99	0.66–1.49	0.97	0.67–1.41
High school	0.80	0.56–1.13	0.69	0.50–0.97
> High school	1.00		1.00	
<i>p</i> -value	0.34		0.08	
Employment status				
Working	1.00		1.00	
Not working	1.36	1.04–1.79	1.47	1.07–2.01
<i>p</i> -value	0.03		0.02	
Poverty income level				
< 100% poverty	1.34	0.76–2.36	1.62	0.98–2.66
100–300% poverty	1.00		1.00	
≥ 300% poverty	1.08	0.76–1.55	0.99	0.73–1.34
<i>p</i> -value	0.59		0.16	
Marital status				
Married	1.00		1.00	
Not married	1.77	1.38–2.46	1.69	1.17–2.46
<i>p</i> -value	< 0.001		0.01	
Region				
Northeast	1.3	0.73–2.31	1.28	0.80–2.04
Midwest	0.96	0.60–1.54	1.27	0.83–1.93
South	1.00		1.00	
West	1.37	0.89–2.10	1.37	0.90–2.09
<i>p</i> -value	0.34		0.46	
Nativity				
US-born	1.00		1.00	
Foreign-born	0.54	0.33–0.90	0.47	0.31–0.71
<i>p</i> -value	0.02		< 0.001	

CIDI, Composite International Diagnostic Interview; DSM, Diagnostic and Statistical Manual; OR, odds ratio; CI, confidence interval.

Data presented are odds ratios and 95% confidence intervals estimated from multivariate logistic regression models of any lifetime mood disorder or any lifetime anxiety disorder and selected characteristics.

^aAdjusted Wald *F*-test.

with those who were married. Respondents who were born outside the USA were less likely to have a disorder than US-born older adults.

Tables 4 and 5 present within group, differences in prevalence for any mood disorder and any anxiety

disorder, respectively. Because of the small number of cases, these tables show bivariate comparisons only. The prevalence of mood disorders declines with age among White people and African Americans whereas anxiety disorders decline with age among White

Table 4 Prevalence of lifetime CIDI/DSM mood disorder by selected sociodemographic characteristics and ethnicity, CPES

	White			African American			Black Caribbean			Latino			Asian		
	%	SE	N	%	SE	N	%	SE	N	%	SE	N	%	SE	N
Age															
55–64	18.6	1.9	149	8.9	1.7	36	18.4	8.7	8	17.4	3.7	51	5.3	1.8	13
65–74	12.9	1.8	95	5.9	1.5	16	5.6	4	5	15.7	3.3	25	7.3	3.6	7
75+	6.8	1.6	34	1.7	0.8	3	7.8	4.2	4	12.9	4.1	15	8.9	4.2	5
F_2^a	15.6***			7.6***			0.8			0.3			0.4		
Gender															
Male	8.3	1.4	68	5.8	1.5	16	21.5	11.8	7	9.3	2.6	24	5.3	2.1	11
Female	17.5	1.6	210	7.2	1.1	39	3.4	1.3	10	21.2	3.6	67	7.7	2.6	14
F_1	28.1***			0.6			1.9			7.8**			0.4		
Employment status															
Working	14.4	1.6	107	7.1	1.4	20	11.7	7.7	7	6.4	2.3	13	6.3	2.6	9
Not working	12.9	1.5	170	6.4	1.2	35	13.4	9	10	19.6	3	78	6.8	1.9	16
F_1	0.9			0.2			0			14.7***			0		
Education															
< 12 years	13.2	2.7	52	6.9	1.1	25	14.2	10.7	6	16.7	3.2	62	2.8	1.4	5
12 years	11.9	1.5	84	8.9	2.2	21	2.1	1.5	3	20.7	5.1	17	8.8	5.3	5
> 12 years	14.9	1.5	142	4	1.2	9	20.3	12.4	8	9.9	3.7	12	7.9	2.3	15
F_2	1.5			2.1			1.5			2			2.4		
Poverty-income level															
< 100% poverty	21.4	6.2	13	11.7	4.9	8	15.1	8.3	3	15.6	5.6	17	15.9	6.3	8
100–300% poverty	12.9	1.7	88	7.6	1.3	36	9.6	7.8	7	15.3	2.7	44	7.2	3.9	7
≥ 300% poverty	13.3	1.4	177	3.6	0.9	12	13.1	9.2	7	16.9	4.3	30	3.3	1	10
F_2	1.2			3.8*			0.1			0.1			2		
Marital status															
Married	11	1.3	138	5.5	1.5	15	17.9	8.5	7	12.9	2.4	43	5.3	2	13
Not married	17.6	2.4	140	7.4	1.2	40	5.8	2.9	10	20.2	3.9	48	10.9	3.5	12
F_1	6.9**			0.9			2.2			4.6*			1.4		
Region															
Northeast	15.1	4	54	11.5	1.5	14	13	7.5	13	22.6	5.3	27	4.5	4.7	1
Midwest	10.9	1.7	76	7.5	2.7	11	0	0	0	11.2	5.8	5	22.2	11.1	1
South	12.7	2.1	81	5.4	0.9	31	1.3	1.1	3	14.9	3.7	47	4.3	4.3	1
West	16.6	2.5	67	0	0	0	66.1	35.1	1	14.2	5.8	12	6.5	1.5	22
F_3	1.3			n/a			n/a			0.8			0.4		
Nativity															
US-born	13.9	1.4	270	6.4	0.9	55	27	12.8	4	12	4.9	12	8	3.3	6
Foreign-born	5.7	2.3	8	2.2	2.3	1	5.4	2.2	13	18.3	2.2	79	6.2	1.9	19
F_1	5.3*			1.7			1.8			1.8			0.2		
Among foreign-born only:															
Years in the USA															
< 10 years							33.9	17.1	3	22.6	8.6	11	12.2	6.2	6
11 – <20 years							1.4	1	2	7.5	3.4	6	9	5.4	7
≥ 20 years							3.3	1.4	8	19.2	2.3	62	2.5	1.2	6
F_2							1.2			2			1.6		
Age at immigration															
< 35 years							3.2	2	3	16.5	2.7	37	2.1	1.3	4
≥ 35 years							7.1	3.4	9	21.8	4.8	42	8	2.8	15
F_1							1.1			0.9			2.9		

CIDI, Composite International Diagnostic Interview; DSM, Diagnostic and Statistical Manual; CPES, Collaborative Psychiatric Epidemiology Surveys; SE, Standard error.

Any mood disorder includes dysthymia and major depression.

Prevalence estimates calculated from cross-tabulation of any lifetime mood disorder and selected characteristic stratified by race/ethnicity.

a Test of association determined by adjusted Wald F -test for each race/ethnicity.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

people only. Compared with men, significantly higher proportions of White people and Latino women have a mood disorder, and more White people and African American women meet criteria for anxiety disorders.

Significantly more Latinos who are not working (19.6%) suffer from mood disorders than those who are working (6.4%). For anxiety disorders, significantly more Asians who are not working (12%) meet criteria

Table 5 Prevalence of lifetime CIDI/DSM anxiety disorders by selected sociodemographic characteristics and ethnicity, CPES

	White			African American			Black Caribbean			Latino			Asian		
	%	SE	N	%	SE	N	%	SE	N	%	SE	N	%	SE	N
Age															
55–64	23.6	1.7	192	15.3	2.2	58	12.6	5	14	18.6	3.7	57	7.3	1.6	15
65–74	13.9	1.7	100	12.6	2.5	34	12.4	7.8	7	19.8	3.5	24	9.3	4.1	10
75+	8.7	2.2	48	7.7	2.5	10	14.2	6.9	5	12	5.5	8	10.3	4.5	6
F ₂ ^a	22.1***			2.9			0			0.8			0.3		
Gender															
Male	12.5	1.4	106	9.5	1.9	26	19.3	10.4	11	12.5	3.3	25	9.2	2.9	17
Female	19.3	1.7	234	15.6	1.7	76	6.1	1.6	15	22.1	3.5	64	8	2	14
F ₁	10.9**			6.6*			1.6			2.9			0.2		
Employment status															
Working	17.4	1.6	124	11	2.3	26	8.9	3.3	13	17.3	6.1	26	3.3	2.5	5
Not working	15.8	1.6	216	14.2	1.8	76	17.9	9	13	18	3.2	63	12	2	26
F ₁	0.7			1.2			1			0			9.2**		
Education															
< High school	16.1	2.9	66	16.1	2.5	51	15.6	10.7	7	18.9	2.7	56	7.9	3	9
High school	13.5	1.6	100	12.1	2.9	29	11.2	5.7	8	19.6	5.7	16	13.2	4.3	9
> High school	18.8	1.5	174	10.4	2.4	22	10.7	5.3	11	12.8	4.9	17	7.1	2.2	13
F ₂	2.7			1.3			0.1			0.8			0.7		
Poverty-income level															
< 100% poverty	29.8	6.3	2.1	26.2	7.6	12	13.1	8.5	3	19.6	8.1	13	14.1	5.3	9
100–300% poverty	15.4	2	108	14.1	1.6	69	15.7	8.5	13	14.8	3.1	36	5.8	2.9	6
≥ 300% poverty	16	1.1	211	7.5	1.6	22	7.6	3.3	10	20.2	4.7	40	8.1	2.3	16
F ₂	4.1*			5.0**			0.6			0.8			0.8		
Marital status															
Married	14	1.4	171	8.7	1.8	23	12.3	6	12	16.4	2.5	45	9.5	2.4	27
Not married	20.2	2.4	169	16.1	2.1	79	13.1	5.2	14	19.9	3.7	44	5.3	3.1	4
F ₁	4.5*			6.1*			0			0.7			1		
Region															
Northeast	17.4	3.7	75	14.5	2.8	17	17.7	7.9	19	15.6	5.9	20	16.4	11.9	4
Midwest	15.7	2.2	97	17.6	3.6	26	14.6	17.6	1	8.7	5.5	3	0	0	0
South	14.6	2	98	9.7	1.4	51	1.8	1.4	5	21.8	2.5	52	10.1	4.8	3
West	18.8	2.2	70	13.3	6.6	9	17.8	17.1	1	16.7	4.5	14	7.3	1.2	24
F ₃	0.8			1.9			1.4			1.1			n/a		
Nativity															
US-born	16.9	1.3	333	12.5	1.4	101	15.2	9.3	4	17.2	3.9	14	3	1.4	3
Foreign-born	5	2.2	7	6.2	4.7	2	10.3	3.6	22	18.2	2.6	75	10	2.4	28
F ₁	11.0*			1.3			0.4			0			5.9*		
Among foreign-born only:															
Year in the USA															
< 10 years							43.2	15.1	4	15.9	4.8	11	11.1	5	8
11 – <20 years							11.3	6.4	6	11.7	5	10	7.5	3.7	7
≥ 20 years							6.7	3.1	12	18.1	2.8	53	10.9	3.4	13
F ₂							1.6			0.5			0.4		
Age at immigration															
< 35 years							9.3	4.7	9	16.2	3.3	37	8.1	2.9	6
≥ 35 years							11	4.3	12	19.2	3.9	37	10.9	2.7	22
F ₁							0.1			0.3			0.8		

CIDI, Composite International Diagnostic Interview; DSM, Diagnostic and Statistical Manual; CPES, Collaborative Psychiatric Epidemiology Surveys; SE, Standard error.

Any anxiety disorder includes panic disorder, agoraphobia, social phobia, generalized anxiety disorder, and posttraumatic stress disorder.

Prevalence estimates calculated from cross-tabulation of any lifetime anxiety disorder and selected characteristic stratified by race/ethnicity.

^a Test of association determined by adjusted Wald *F*-test for each race/ethnicity.

**p* < 0.05.

***p* < 0.01.

****p* < 0.001.

for a disorder than those who are working (3.3%). Among African Americans, lower income is associated with higher prevalence of both mood and anxiety

disorders. Not being married is significantly associated with higher prevalence of mood and anxiety disorders among non-Hispanic White people, higher

prevalence of anxiety disorders among African Americans, and a higher prevalence of mood disorders among Latinos. White people born in the USA had significantly higher prevalence of both mood and anxiety disorders than those born outside of the USA, whereas foreign-born Asian Americans had a higher prevalence of anxiety disorders than those born in the USA.

Conclusions

This study examined prevalence rates for psychiatric disorders among a national sample of older non-Hispanic White people, African Americans, Caribbean Black people, Latinos, and Asian Americans. Overall, older non-Hispanic White people and Latinos consistently had higher prevalence rates of disorders compared with the other racial and ethnic groups in this study and had significantly greater odds of meeting criteria for a mood or anxiety disorder compared with African Americans. The similarity in prevalence for White people and Latinos is inconsistent with previous research indicating that Latinos, particularly immigrant Latinos, are at lower risk for most psychiatric disorders compared with White people (Alegria *et al.*, 2008; Breslau *et al.*, 2006; Takeuchi *et al.*, 2007). However, recent research has also found that the protective effect of immigration is inconsistent across Latino subgroups and disorders (Alegria *et al.*, 2008; Jimenez *et al.*, 2010; González *et al.*, 2010). Further, the lower risk for disorders among Latinos is more pervasive in younger cohorts and within lower education groups (Breslau *et al.*, 2006). The current study supports Breslau *et al.*'s finding by indicating that prevalence between White people and Latino older adults is similar. Furthermore, whereas nativity, length of time in the USA, and age of immigration have been postulated as possible reasons for a higher risk of disorders among older Latinos (Burnam *et al.*, 1987; Vega *et al.*, 1998), these factors were not significantly related to prevalence among Latinos in this study. This is consistent with Jimenez *et al.*'s (2010) findings related to nativity and extends the inquiry by considering additional immigration-related variables.

Consistent with prior research, women had higher prevalence for disorders (e.g., Kessler *et al.*, 2005). Additionally, within selected racial/ethnic groups (i.e., White people, African Americans, and Latinos) persons who are not married and not working had higher prevalence for disorders. Current perspectives on the higher prevalence of disorders for persons who are unmarried and unemployed focus on distinguishing between social selection *versus* social causation processes

(Mastekaasa, 1992). In addition, however, previous research has demonstrated the ways in which the processes of immigration and acculturation can differentially affect men and women (e.g., Black *et al.*, 1998). The higher prevalence of mood disorders among older Latinos who are not working and not married suggests a need to examine the correlates of psychiatric disorders among discrete demographic and ethnic subgroups of the Latino population.

There are several possible explanations for the lower prevalence of major depression and dysthymia among African Americans. Prior evidence suggests that Black people express psychological distress differently than non-Hispanic White people with symptom presentation less focused on mood disturbances and more focused on somatic complaints (Brown *et al.*, 1996; Das *et al.*, 2003). Furthermore, dysphoric mood, suicidal thoughts, agitation, or anxiety may be less characteristic of depression for African Americans (Wohl *et al.*, 1997; Gallo *et al.*, 1998). Moreover, symptoms of depression may be minimized or interpreted by African Americans as part of life's burden to be endured or as normal signs of the aging process (Neal-Barnett and Smith, 1997; Steffens *et al.*, 1997). Thus, the diagnostic measures used in the CPES may not adequately capture symptom presentation, culturally bound explanatory models, and sociocultural experiences. Other plausible explanations for the lower rates of mood disorders among African Americans may be related to increased levels of religious involvement and church-based social support, which are linked to higher levels of psychological well-being (Krause, 2002; Levin *et al.*, 1995). Older African Americans consistently report higher levels of religious involvement (Taylor *et al.*, 2007; Taylor *et al.*, 2004) and informal social support from church members (Krause, 2002). Additionally, research on older African Americans indicates that church attendance was inversely associated with mood disorders (Chatters *et al.*, 2008).

Among African Americans, the higher prevalence of disorders for those with less income and among those who are not married suggest that disorders are associated with fewer material resources and socially supportive relationships and networks. The finding that being married is a protective factor for older African Americans is consistent with previous epidemiological research (Ford *et al.*, 2007). Interestingly, region was not significant in this study although prior research has found lower prevalence of disorders among older Black adult residents of the South who have larger social networks that provide assistance with health and mental health problems (Chatters *et al.*, 1985; Ford *et al.*, 2007).

Of all the groups studied, Asian Americans were less likely to report any anxiety disorder. This is consistent with recent work based on younger age cohorts, which documented that Asian Americans less frequently endorsed symptoms of all four anxiety disorders compared with other racial groups (Asnaani *et al.*, 2010). Language and cultural differences may influence the degree to which diagnostic instruments capture the meaning of anxiety symptoms among Asian Americans (Alegría *et al.*, 2004; Johnson *et al.*, 2007). Others have also speculated that cultural differences in terms of a collectivistic worldview, emphasizing the importance of maintaining harmonious relationships and overall well-being, may account for lower anxiety rates (Asnaani *et al.*, 2010; Landrine, 1992).

Lastly, immigration-related phenomena such as degree of bilingual fluency, duration of exposure to US culture, and acculturative stress have been suggested as potential explanations for different rates of anxiety among immigrants (Breslau and Chang, 2006; Takeuchi *et al.*, 2007). Jimenez *et al.* (2010) found that older Asian immigrants had higher lifetime rates of generalized anxiety disorder compared with older Asians born in the USA. Our finding that older foreign-born Asian Americans had a higher prevalence of anxiety disorders than those born in the USA is consistent with this work. However, Asians as a whole consistently have lower rates of most psychiatric disorders compared with other groups in the USA. Further, it is interesting to note that the prevalence of disorders in Asian countries is generally lower than in the USA (WHO World Mental Health Survey Consortium, 2004). Given that immigrants tend to have better health compared with those who remain in the home country, the higher prevalence of anxiety disorders in this sample of foreign-born Asian immigrants lends some support for acculturative stress hypotheses; however, this cannot be directly assessed from these data.

Although prevalence rates of psychiatric disorders differ among racial and ethnic groups, we should avoid the interpretation that some groups have higher *versus* lower need for mental health services based only on these findings. As alluded to earlier, differential presentation of self-reported psychiatric symptomatology among racial and ethnic groups are a possible explanation for the differences in rates across categories (Alegría and McGuire, 2003; Alegría *et al.*, 2007). Further, other aspects of cultural context may affect symptom presentation of depression among older ethnic and racial minorities beyond the somatization of distress (Diefenbach *et al.*, 2009). This has implications for practice in that clinicians and other service providers will need to consider potential group-specific

norms regarding presentation of distress and the meanings of symptoms. Provider factors that may increase clinician bias and misdiagnosis will equally need attention. Although this research could not account for these nuanced approaches to psychiatric diagnosis, the study strongly underscores the need for future research that explores culturally based explanatory models of both symptom presentation and provider interpretation.

Limitations

This study has several limitations. First, because segments of the population such as homeless and institutionalized individuals were not represented, our findings are not generalizable to these subgroups. Second, disorder-specific symptoms and behaviors may be underreported because of item non-response to sensitive questions, which is a common issue in survey interviewing. Third, we cannot examine discrete groups of Latinos (e.g., Mexican American) or Asian Americans (e.g., Chinese) because of the small sample size of older adults in these groups. Fourth, the relatively small sample sizes of Asian Americans and Caribbean Black people coupled with low prevalence rates makes it more difficult to analyze discrete disorders among these two groups. We did not adjust for health status because this information was not available for non-Hispanic White people. Despite these limitations, this study is one of a recent group of investigations that examines the prevalence rates of psychiatric disorders among five racial and ethnic groups that significantly enhances our understanding of psychiatric disorders within and across older minority groups.

Conflict of interest

Authors have no conflicts of interest.

Key points

- Major depressive disorder and social phobia were most prevalent among adults aged 55 and older.
- Older non-Hispanic Whites and Latinos high prevalence rates for disorders than other racial and ethnic groups which is inconsistent with previous research.
- Older African Americans had lower rates of depression and dysthymia.
- Asian Americans were less likely than other groups to meet criteria for an anxiety disorder. However, older foreign born Asians had a higher prevalence of anxiety disorders than U.S.-born Asians.

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