Antidepressant Use among Asians in the United States

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Abstract

Objectives—We examined the prevalence and predictors of past-year antidepressant use in a nationally representative sample of Asian Americans and non-Latino Whites.

Methods—Analyses of 12-month antidepressant medication use were based on data from the Collaborative Psychiatric Epidemiology Surveys (CPES) that surveyed Asian (Chinese, Filipino, Vietnamese and others; N=2,284) and non-Latino White (N= 6,696) household residents ages 18 years and older in the 48 contiguous United States and Hawaii.

Results—Prevalence rates for 12-month antidepressant use for Asians with major depression ranged from 8.7% among Vietnamese to 17% among Chinese respondents. Compared to non-Latino Whites (32.4%), all Asians (10.9%) meeting criteria for 12-month depressive and anxiety disorders, but especially Filipinos (8.8%) were less likely to report past-year antidepressant use.

Conclusions—We found disparities in past-year antidepressant use among all the examined major Asian groups meeting criteria for 12-month depressive and anxiety disorders. These disparities were not explained by mental health need or socioeconomic factors that enable access to care.

Keywords

Asian American; Chinese Americans; Filipinos; Vietnamese; Major Depressive Disorder; Depression; Antidepressive agents

Introduction

Asian Americans are the fastest growing and perhaps most ethnically diverse group in the United States. While depressive and anxiety disorders are leading causes of disability worldwide and major national and global public health problems, little is known about the prevalence of mental health services use by Asian Americans. (1) Chinese Americans represent the oldest and largest ethnic Asian American group in the US and overall have

lower rates of depressive disorders than Whites; however with more acculturation rates increase and begin to approximate rates for Whites. (2) Little is known about depressive disorders in other nationally representative samples of community-dwelling major Asian ethnic groups. Despite the rapid rise in use of antidepressants in the general population, national estimates of antidepressant use among Asians are non-existent.(3)

As a largely immigrant population, Asians reportedly manifest various emotional and behavioral problems related to the immigrant experience.(4) The limited research available on Asian Americans shows that despite these risk factors, Asian Americans report lower rates of mental health–related service use compared to the general population.(5-8) Explanations for this low mental health services use focus on several barriers to care: 1) cultural incompatibility of mental health services to needs (e.g., language, lack of patient-provider ethnic concordance); (7,9-11) 2) cultural barriers, such as stigma, differing causal beliefs; (11-13) 3) limited access to care, (e.g., low rates insurance coverage); (14,15) and 4) lack of awareness of mental health problems or understanding of healthcare services. (10,16)

A number of studies have documented that ethnic minority patients receive disparate mental healthcare.(17-19) However, it is often difficult to disentangle which ethnic groups in particular are at-risk for inequalities in care. More often than not, "lumping" or aggregating ethnically diverse Asian and Latino subgroups is seen in the research literature. Aggregating subpopulations does little to disentangle disparities in care, potentially masking differences that exist when ethnic subgroups are disaggregated.(20-22) This is especially consequential for Asian Americans considering the varied cultural, linguistic, and immigration histories that each ethnic group brings to this country.

First, several studies show that nativity, generational status in the US, and acculturation are important in understanding mental health services use among Asian Americans and why less acculturated Asians are less likely than non-Latino Whites to utilize specialty mental healthcare. (8,23,24) Less acculturated Asians are often reportedly more reluctant to seek help for emotional problems and delay using mental health services until they are more severely ill compared to non-Latino Whites.(25,26) Many Asians report that emotional and personal problems result from a lack of will power or bad thoughts and emphasize self-control and solving one's own problems as solutions.(27) The existence of "culture-bound syndromes," such as neurasthenia among Chinese Americans, and the missing equivalence of native labels and diagnostic tools are likely to increase the risk of misdiagnosis by health professionals.(4) Many Chinese Americans will not report a depressed mood to their physicians and are unfamiliar that depression is a treatable emotional disorder.(28,29) It has been suggested that Asians are likely to suppress or deny expression of emotions, finding it more acceptable to somatize emotional distress or emphasize physical or behavioral symptoms.(9,30-32)(28) Chung (2003) argues that Asians, especially those with low acculturation levels may put the patient at risk for underdetection of psychiatric problems. (33) Correspondent with this general line of research, we expected that both Asian ethnicity and lack of acculturation would be associated with lower prevalence of mental disorders and negatively related to mental-health services use.

Secondly, medical and psychiatric conditions, particularly those with vague symptoms, are difficult to diagnose in the general population and may be further complicated by cultural and language differences between clinicians and patients. Borowsky et al (2003) found that primary care doctors may not identify depression in their Asian American patients as much as they identify depression in White patients.(34) We expected that medical conditions, particularly those with psychiatric-like symptoms (e.g., fatigue in diabetes) and patient-provider cultural differences complicate the recognition and treatment of psychiatric

disorders (i.e., prescribing antidepressants) and help explain disparities in mental healthcare for ethnic minorities.

The purpose of this study was to examine psychiatric and non-psychiatric factors associated with 12-month antidepressant use in a nationally representative sample of community-dwelling Asian Americans. We focused on antidepressant pharmacotherapy for depressive disorders and anxiety disorders. We compared past-year antidepressant use between Asians and non-Latino Whites while accounting for other factors thought to enable healthcare access. We used a version of the Andersen Behavioral model of healthcare access modified for use with populations vulnerable to inequalities in healthcare.(35) We use the Behavioral model to frame our analytic approach to understanding factors that may influence antidepressant use among Asians in the US. (36)

Methods

Participants

Data were analyzed from the National Institute of Mental Health, Collaborative Psychiatric Epidemiology Surveys (CPES). The sample consists of four subgroups (600 Chinese, 508 Filipino, 520 Vietnamese, and 656 respondents of other Asian ancestry) (n=2,284) and non-Latino Whites (n=6,696).

Sampling procedures, sample characteristics, and interview procedures have been previously reported.(37,38) Trained bilingual interviewers using computer-assisted interviewing software conducted in-person interviews unless the respondent requested a telephone interview or if an in-person interview was not feasible. CPES instruments were available in English, Vietnamese, Tagalog, Mandarin and Cantonese and were translated and back-translated according to standard procedures. Data were collected between May 2002 and November 2003. Sampling weights were created at the University of Michigan to account for unequal probability of selection into the samples and non-response rates. The weighted data provides a nationally representative sample of Asians and Whites (ages 18 and older) in the non-institutionalized population of the coterminous United States and Hawaii. Sampling weights were incorporated in all analyses presented in this study, allowing for the generation of population estimates by analyzing data specific to subpopulations of interest.

Main Outcome

Past-year antidepressant use was measured using self-reported responses to the question "Did you take any type of prescription medicine in the past 12 months for problems with your emotions, substance use, energy, concentration, sleep, or ability to cope with stress?" Two board-certified psychiatrists and a masters-level psychiatric nurse specialist reviewed prescription antidepressant generic and trade names from pill bottle records collected during interviews and verified that the inventoried drugs were antidepressant agents prior to coding for the analyses.

Predictors

Three Andersen model components of healthcare access (predisposing, need, and enabling factors) were used to predict past-year antidepressant use.(36) First, predisposing factors included categorical variables for Asian subgroups (Chinese, Filipino, Vietnamese and "Other Asians") and non-Latino Whites. We were interested in understanding if and how cultural variation was related to antidepressant use in this mixed ethnicity subpopulation. (8,24,39) Therefore, we operationalized acculturation-nativity as a dichotomous indicator: high (for US-born respondents with one or two US-born parents, or foreign-born respondents with two US-born parents) and low (for foreign-born individuals with one or no

US-born parents, or US-born ones with no US-born parents).(40) Gender and age (18–34, 35–65, and over 64 years) were included as covariates. Second, need factors included dichotomous indicators of: 1) 12-month mental disorders and 2) self-reported medical conditions. Mental disorders were assessed using the World Mental Health Composite International Diagnostic Interview (CIDI) administered by trained, non-clinical interviewers. In this study, we focused on Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria for 12-month major depression, dysthymia, and five specific anxiety disorders (agoraphobia without panic, generalized anxiety, panic, post-traumatic stress disorder and social phobia). DSM-IV diagnostic algorithms with medical condition exclusionary criteria were used. Self-reported medical conditions (high blood pressure, diabetes, stroke, and heart disease) associated with antidepressant use were also included as need factors. Finally, healthcare access enabling factors included household income (< $18,000; $18,000-$31,999; $32,000-$54,999; and $55,000 or more), years of education (0-11; 12; 13-15; and 16 or more) and health insurance coverage (insured and uninsured). A question on financial difficulty paying monthly bills was included as a potential barrier to healthcare access. While financial stress in all likelihood "disables" healthcare access and is not a traditional variable in the Anderson model, we believe that understanding financial stress is important to understanding health services among ethnic minorities, particularly in countries without universal healthcare coverage.

Data Analysis

Statistical analyses were performed using commands available for the analysis of complex sample survey data using Stata software (Release 10.1; StataCorp, College Station, TX, 2008). All statistical analyses performed were design-based in that they: 1) utilized the combined CPES sampling weights to account for individual-level unequal probabilities of selection into the samples, individual non-response, and additional post-stratification to ensure population representation; and 2) accounted for the complex multistage clustered design of the sample when computing standard errors for the calculated estimates. Specifically, a Taylor Series Linearization approach to variance estimation was used. (41)

Univariate and bivariate analyses were conducted to calculate sample estimates of demographic, mental health, medical conditions, and other variables and the prevalence of antidepressant use in specific subpopulation of interest (along with 95% confidence intervals). Bivariate ordinary least squares, logistic, and ordered logistic regression analyses were performed to examine simple associations between antidepressant use and individual-level characteristics, including diagnoses, depressive symptoms, demographics, and co-existing medical conditions. Multivariate logistic regression models were used to test the Anderson model components and estimate the relationships of the individual diagnoses, depressive symptoms, demographics, and co-existing medical conditions with the likelihood of an antidepressant use, when controlling for the effects of other covariates in the model. Odds ratios (OR) expressing the relative influences of the covariates on the odds of antidepressant use were calculated based on the multivariate logistic regression models, along with design-based 95% confidence intervals (CI) for the estimated ORs.

Results

The demographic characteristics of the study sample by ethnic groups are shown in Table 1. Bivariate ordinary least squares regression analyses indicated that Vietnamese (β=-3.2; P<0.01), Filipino (β=-4.0; P<0.01), Chinese (β=-4.1; P<0.01) and all other Asian (β=-8.9; P<0.01) respondents were younger relative to non-Latino Whites. Bivariate ordered logit regression revealed that all Asian groups, with the exception of the Vietnamese, earned equal or higher incomes and had higher levels of education compared to non-Latino Whites. Vietnamese lagged non-Latino Whites in both income (OR=0.51; P<0.01) and education

(OR=0.50; P<0.01). Filipino respondents (OR=1.63; P<0.01) were 63% more likely to be placed in a higher income category and the all other Asian respondents (OR=1.36; P<0.05) were 36% more likely to be so relative to non-Latino Whites. Chinese and non-Latino white respondents did not significantly differ in their income classification (OR= 0.91; P=0.61). Filipinos (OR=1.58; P<0.01), Chinese (OR=1.64; P<0.01), and all other Asians (OR=2.99; P<0.01) were more likely to have higher levels of education compared to non-Latino Whites.

Asians in general had lower health insurance coverage (86.3%) compared to non-Latino Whites (90%; X^2 =8.02; P<0.01). A greater proportion of Vietnamese respondents were uninsured compared to both non-Latino Whites and the other Asian groups (X^2 = 4.41; P <0.01). Vietnamese respondents were less acculturated than other Asian ethnic groups (X^2 = 22.69; P<0.01) and almost all had at least one foreign-born parent, indicating that they are newer immigrants than the other Asian subgroups examined. The most common vascular condition among Asians and Whites was hypertension. Hypertension was more common among Filipinos and non-Latino Whites compared to other groups (X^2 = 13.26; P<0.01). Filipinos and non-Latino Whites reported similarly high prevalence rates of one or more vascular conditions, followed by Vietnamese respondents (X^2 = 10.41; P<0.01).

The prevalence estimates of 12-month major depression (X^2 = 5.55; P<0.01) and anxiety disorders (X^2 = 19.89; P<0.01) were significantly higher among non-Latino Whites, often twice that of Asians. The prevalence rates of 12-month Dysthymia (X^2 = 2.56; P=0.069), however, were only marginally significantly different.

Prevalence of Antidepressant Use

Prevalence estimates of antidepressant use by ethnicity for different disorders are shown in Table 2, and bivariate logit odds ratio comparisons relative to non-Latino Whites are presented in Table 3.

Regardless of mental disorders, 11.8% of sample respondents indicated past year antidepressant use. Asians overall (2.7%) were much less likely to use antidepressant drugs relative to non-Latino Whites (12.3%; X^2 = 128.60; P<0.01). Moreover, each Asian subgroup had significantly lower odds of antidepressant use compared to the non-Latino Whites.

The antidepressant use differential between Asians and non-Latino Whites extended to the subgroup of respondents meeting depressive disorder criteria. The overall prevalence of antidepressant use in this subpopulation among Asians was 13.2%, almost a third of the prevalence rate among non-Latino Whites meeting the same criteria (41.3%; X^2 = 26.38; P<0.01). All our Asian subgroups had significantly lower odds of antidepressant use relative to non-Latino Whites.

Similar prevalence patterns were evident among the subgroups of respondents meeting criteria for 1) dysthymia; 2) anxiety disorders; and 3) any of the considered mental disorders (i.e. depression, dysthymia and anxiety). Asian respondents meeting criteria for dysthymia (17.4%), anxiety disorders (11.8%) and any mental disorder (10.9%) had much lower rates of antidepressants use compared with non-Latino Whites meeting similar criteria (52.8%; X^2 = 13.96; P<0.01, 32.3%; X^2 = 27.8; P<0.01, 32.4%; X^2 = 53.0; P<0.01, consecutively). When individual Asian subgroups were considered separately, respondents meeting criteria for anxiety disorders, with the exception of the Vietnamese respondents, had lower odds of antidepressant use than non-Latino Whites. Among respondents meeting criteria for any depressive or anxiety disorders examined in this study, all the Asian subgroups had significantly lower rates of antidepressant use compared to non-Latino Whites.

Predictors of Antidepressant Use

Table 4 reflects the three components of the modified Andersen behavioral model. Of the *predisposing* factors examined (model 1), all Asian subgroups had significantly lower odds of antidepressant use compared to non-Latino Whites. Adults (ages 35-65) were significantly more likely to use antidepressants relative to young adults (ages 18-34), but older adults (65 and older) did not significantly differ from young adults. Being female increased the odds of antidepressants use by 160% relative to male counterparts. In addition, respondents in the high acculturation-nativity group had significantly higher odds of use compared to non-Latino Whites. In model 2 (*need* factors), meeting criteria for depressive or anxiety disorders significantly increased the odds of past-year antidepressant use. Moreover, reporting one or more of the medical conditions was associated with higher odds of antidepressant use. Of the healthcare access *enabling* factors (model 3), both being insured and reporting financial difficultly were associated with significantly higher odds of antidepressant use. Controlling for mental health and health *need* and *enabling* factors had marginal moderating effects, and in the case of Filipinos had an accentuating effect, on the significantly lower odds of utilization of antidepressants among Asian subgroups compared to non-Latino Whites.

Discussion

Few Asian Americans with recent depressive and anxiety disorders reported past-year antidepressant use. We found healthcare disparities in antidepressant use for Chinese, Filipino and Vietnamese subgroups compared to non-Latino Whites. The differences in antidepressant use were not explained by differences in need or other socioeconomic factors that influence or enable access to healthcare. Predisposing cultural differences, in the form of immigration histories, appear to have played a role in the antidepressant use differences we observed. Our findings have particular relevance as US healthcare policymaker debates the merits of insuring immigrants. Consistent with previous findings, antidepressant use was associated with medical conditions independent of coexisting mental disorders, (42) and acculturation-nativity was associated with antidepressant use.

Inequalities in antidepressant use were found among Vietnamese, Filipinos, Chinese and Asians of other ancestry compared to non-Latino Whites. Filipinos generally had the lowest rates of antidepressant use compared to other Asian ethnic groups, which is a new finding for Filipinos because Asian subgroups, like Latinos, are commonly "lumped" together in national studies.(20,21) Ethnic group "lumping" is a practice that is discouraged by the Surgeon General and the National Institute of Health.(43) Additionally, we believe that the practice of combining ethnic Asian subgroups introduces false negative errors (i.e., Type II errors) in studies, as important ethnic group differences are potentially lost.(22) We argue that, when feasible, ethnic subgroups should be disaggregated to determine if important differences are present. The additional information specific to each ethnic subgroup is essential for properly specifying and ultimately targeting policies and efforts aimed at reducing ethnic and racial disparities in care.

The low antidepressant use rates among Vietnamese, Filipinos and Chinese with major depression, anxiety and any mental disorder compared to non-Latino Whites with similar disorders likely indicates high unmet need in these ethnic populations. However, we did not assess other forms of treatment, such as psychotherapy and complimentary and alternative medicine, in this study. So, it is possible that Vietnamese, Filipinos, and Chinese are not undertreated for these mental disorders, if these respondents are indeed using other forms of mental healthcare not examined in our study.

Higher antidepressant use was positively associated with acculturation-nativity, and mirrors associations observed among Latino populations.(44) Age of immigration has been associated with the risk of mental disorders among Asian Americans and has been shown to moderate the relationship of subjective social status and mental health in immigrants. (45,46) Because our acculturation measure was largely dependent on nativity and age of immigration, the acculturation-treatment relationship we observed might reflect differential risk of mental disorders between immigrants and non-immigrants associated with treatment use. (2,47) The relationships between antidepressant use, ethnicity, and acculturation were not strongly affected by socioeconomic status, insurance coverage, and financial stress, factors thought to "enable" better access to healthcare. Nevertheless, insurance coverage, which is higher among US-born Asians and Asians who immigrated early in life compared to recent immigrants, was associated with higher antidepressant use. Financial stress, which is higher among more recent Asian immigrants than their counterparts, was also associated with more antidepressant use. Combined, our findings suggest ethnicity and acculturation are important factors associated with access to mental healthcare, particularly antidepressant use. This suggests that cultural factors are related to antidepressant treatment use and that first and second generation immigrants may require more outreach efforts to encourage use of mental health services.

Over half (53.7%) of all past-year antidepressant use was found among Asians and non-Latino Whites who did not meet criteria for recent depressive and anxiety disorders. This is consistent with previous work indicating use of mental health services without current mental disorders.(44,48,49) To better understand this observation, medical conditions were examined. Of the medical conditions considered, medical histories of diagnoses of hypertension and heart disease increased the likelihood of antidepressant use. Further, antidepressant use among respondents with medical conditions was not completely explained by the presence of coexisting DSM-IV psychiatric disorders. Our findings indicate that antidepressant agents are often used for non-psychiatric conditions. This finding could be explained by the appropriate use of antidepressants for other unmeasured medical conditions (e.g. neuropathic pain in diabetics, insomnia, or incontinence), or antidepressants prescribed for mood changes or previous depression that co-occurred with vascular conditions, and perhaps the mood problems were treated effectively and respondents were in remission. Nevertheless, our findings suggest it is essential to identify and subtract non-psychiatric uses of antidepressants to avoid inappropriately inflating true utilization and costs of mental health services. Furthermore, this pattern of antidepressant use among respondents not meeting criteria for recent depressive and anxiety disorders suggests that further research is needed to examine the possible role that hypothesized factors (e.g., somatization) may play in understanding mental health problems among Asian Americans. (50)

The antidepressant use we reported is unique in that our estimates are based on a nationally representative household sample. Respondents were selected into the sample regardless of medical care access, a feature that is distinct from earlier reports based on clinical records and medical claims data.(51) Non-elderly uninsured rates range from 12% among Japanese Americans to 21% for Vietnamese Americans.(52) Estimates of antidepressant treatment established in community samples, without necessarily requiring that the sample have access to care (as in the case of medical claims samples) are critical to understanding the health needs of this population, particularly when barriers to care vary between ethnic subgroups. Secondly, antidepressant medication use in this study was determined by both self-report and pill bottle inventories among respondents who met established criteria for mental disorders.(53) Pill bottle inventories limit underreporting drugs that were not recognized by respondents as psychiatric medications. Previous national estimates of disparities in mental

healthcare have relied on self-reported mental conditions, which may introduce untoward bias into estimates from previous reports.(54)

Our results should be interpreted within the context of their limitations. First, the CPES surveys are cross-sectional community-based samples and excluded the homeless or institutionalized and may not reflect the true current need for depressive and anxiety disorders treatment in the United States. Second, underuse of antidepressants may be underestimated from systematic survey non-response and non-reporting.(41) Third, although the CPES surveys represent the largest psychiatric epidemiologic study to-date, disaggregated ethnic group data was limited in sample size. Fourth, classification of mental disorder in this study relied on self-reported information without the use of clinician-based interviewing. There is some controversy that DSM criteria may be culturally biased and inadequately capture psychiatric disorders among Asians. (55) To that degree, the CIDI is likely similarly culturally biased across race and ethnicity. Consequently, it is possible that some Asian psychiatric disorders were not detected and thus we could have overestimated the percentage of Asians without psychiatric disorders using antidepressants. Finally, because we were interested in comparing antidepressant use by Asians and non-Latino Whites, we were limited in our operationalization of acculturation, which was limited to only one aspect of acculturation. A more extensive and nuanced evaluation of acculturation and its relationship to understanding antidepressant use may be more informative and ultimately improve antidepressant use by those with psychiatric need among Asians.

This study has several implications for practice and future research. First, new practice models are needed to enhance detection of mental disorders and treatment initiation among Asian Americans while being culturally sensitive. Collaborative care depression interventions have the potential to detect and treat Asian patients in primary care where they are more likely to accept treatment in the context of comorbid medical disorders, and a bilingual/bicultural depression care manager could support patients and troubleshoot problems with side-effects or needed dosage corrections for antidepressants.(56,57) Second, more research is needed on which cultural factors are associated with antidepressant use among Asian Americans. Future research could further explore the social and cultural factors that comprise the acculturation process and may be associated with antidepressant use, such as health knowledge or treatment beliefs and preferences by Asian ethnic groups. Third, research on patient-provider communication is needed to improve detection and accurate diagnosis and effective treatment of psychiatric disorders.

In summary, few Asians and non-Latino Whites meeting criteria for psychiatric disorders reported past-year antidepressant use. Regardless of ethnicity or factors enabling access to mental healthcare, all Asian groups examined had lower past-year antidepressant use compared to non-Latino Whites. Many of the antidepressant drugs used by Asians were by respondents without current psychiatric disorders or were related to medical conditions independent of comorbid psychiatric disorders. (42,44,48,49) Our results are evidence supporting a need for interventions that target the treatment of depressive and anxiety disorders among specific Asian populations.

Acknowledgments

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Table 1

Demographic characteristics of the Asian and non-Latino White subpopulations of the Collaborative Psychiatric Epidemiology Surveys.

	Vietnamese % (SE)	Filipino % (SE)	Chinese % (SE)	Other Asian % (SE)	non-Latino Whites % (SE)	Total % (SE)	X² Test
	n=520	n=508	n=600	n=656	n=6696	n=8980	
Income (US Dollars)							
$0-17,999	31.7(2.0)	14.8(1.7)	24.5(2.6)	15.9(2.0)	16.4(1.0)	16.6(0.9)	
$18,000-31,999	14.3(2.6)	8.0(1.6)	7.9(1.3)	6.4(1.1)	13.1(0.8)	12.8(0.8)	
$32,000-54,999	18.3(2.2)	14.9(2.6)	17.9(2.5)	21.3(2.8)	22.4(0.7)	22.1(0.6)	P<0.001
$55,000 and over	35.7(2.7)	62.3(4.0)	49.7(3.7)	56.4(3.3)	48.2(1.6)	48.4(1.5)	
Education (Years)							
Less than 12	34.2(2.9)	11.7(2.2)	18.7(2.8)	7.0(1.5)	13.2(1.0)	13.3(0.9)	
12	21.3(2.0)	19.8(2.3)	16.7(2.0)	14.9(1.6)	31.7(1.4)	30.9(1.4)	
13-15	22.2(1.9)	33.0(2.1)	20.5(2.6)	25.6(2.3)	28.9(1.1)	28.6(1.0)	P<0.001
16 and over	22.4(3.6)	35.5(3.7)	44.0(3.7)	52.6(3.0)	26.2(1.4)	27.2(1.3)	
Age (Years)							
Young Adult (18-34)	30.0(2.2)	35.8(2.6)	31.9(2.9)	50.5(2.9)	27.6(1.4)	28.3(1.3)	
Adult (35-65)	57.8(2.6)	51.4(2.5)	57.5(3.3)	42.4(2.9)	52.9(1.7)	52.8(1.6)	P<0.001
Older Adult (65 and over)	12.2(2.3)	12.8(2.3)	10.6(2.5)	7.1(2.2)	19.4(1.2)	18.89(1.2)	
Sex							
Female	54.6(1.9)	55.4(2.2)	53.7(2.0)	49.6(2.3)	52.4(1.1)	52.4(1.0)	P = 0.35
Male	45.4(1.9)	44.6(2.2)	46.2(2.0)	50.4(2.3)	47.6(1.1)	47.6(1.0)	
Insurance							
Uninsured	18.3(1.9)	12.1(1.8)	13.9(1.9)	12.7(2.0)	10.0(0.8)	10.2(0.8)	P<0.01
Insured	81.7(1.9)	87.9(1.8)	86.1(1.9)	87.3(2.0)	90.0(0.8)	89.8(0.8)	
Acculturation-Nativity							
Low	99.9(0.1)	85.1(2.1)	88.6(2.5)	78.0(3.4)	6.9(0.8)	11.4(1.0)	P<0.001
High	0.1(0.1)	14.9(2.1)	11.4(2.5)	22.0(3.4)	93.1(0.8)	88.6(1.0)	
Medical Conditions							
Heart Disease	4.3(1.3)	5.6(1.2)	2.2(0.5)	3.4(1.4)	5.5(0.6)	5.4(0.5)	P = 0.09
Stroke	1.6(0.6)	1.2(0.5)	0.9(0.4)	0.4(0.3)	2.8(0.3)	2.7(0.3)	P<0.001
Diabetes	8.8(2.0)	8.4(1.5)	5.0(1.0)	7.4(1.5)	6.9(0.5)	6.9(0.5)	P = 0.41

	Vietnamese % (SE)	Filipino % (SE)	Chinese % (SE)	Other Asian % (SE)	non-Latino Whites % (SE)	Total % (SE)	X² Test
	n=520	**n=508**	**n=600**	**n=656**	**n=6696**	**n=8980**	
Hypertension	16.1(2.0)	26.4(3.0)	14.1(2.0)	13.4(1.7)	24.3(0.7)	23.9(0.7)	P<0.001
One or More Vascular Disease	24.2(2.8)	30.4(3.0)	18.9(2.2)	18.5(2.4)	30.0(0.8)	29.5(0.8)	P<0.001
12-Month Mental Disorders[a]							
Major Depressive Disorder	4.2(1.1)	4.2(1.1)	4.6(1.2)	5.6(1.2)	8.6(0.4)	8.4(0.4)	P<0.001
Dysthymia	1.2(0.5)	1.0(0.4)	0.5(0.2)	2.5(1.0)	2.4(0.2)	2.4(0.2)	P = 0.07
Anxiety[b]	4.5(0.9)	6.4(0.9)	6.4(1.2)	6.6(1.2)	13.5(0.5)	13.1(0.5)	P<0.001
Any of the Above	6.7(1.1)	8.7(1.2)	9.6(1.8)	9.9(1.6)	17.6(0.6)	17.1(0.6)	P<0.001
None of the Above	93.3(1.1)	91.3(1.2)	90.4(1.8)	90.0(1.6)	82.4(0.6)	82.9(0.6)	P<0.001

[a] Based on the World Mental Health Composite International Diagnostic Interview

[b] Includes agoraphobia with and without panic, generalized anxiety disorder, panic disorder, posttraumatic stress disorder, and social phobia

Table 2

Prevalence of past-year antidepressant drug use in a nationally representative samples of Asians and non-Latino Whites (N=8980) in the United States.

	Estimated Prevalence		
	(%)	SE	X^2 Test
All Ethnic Groups	11.8	0.5	
Vietnamese	2.5	0.7	
Filipino	2.1	0.5	
Chinese	2.5	0.5	P<0.001
Other Asians	3.4	0.9	
Non-Latino Whites	12.3	0.6	
12-Month Mental Disorders[a]			
Major Depression	40.3	2.1	
8.7			
5.3ese	8.7	5.3	
Filipino	12.5	7.9	P<0.001
Chinese	17.0	7.9	
Other Asians	12.2	5.2	
Non-Latino Whites	41.3	2.1	
Dysthymia	51.5	4.6	
Vietnamese	0.0	0.0	
Filipino	28.8	23.1	
Chinese	50.6	23.5	P<0.001
Other Asians	12.6	5.2	
Non-Latino Whites	52.8	4.7	
Anxiety[b]	31.7	1.7	
Vietnamese	16.5	9.0	
Filipino	12.0	5.8	
Chinese	18.2	5.4	P<0.001
Other Asians	6.1	3.1	
Non-Latino Whites	32.3	1.7	
Any Mental Disorder	31.8	1.6	
Vietnamese	14.5	6.0	
Filipino	8.8	4.6	
Chinese	14.7	3.1	P<0.001
Other Asians	8.5	3.2	
Non-Latino Whites	32.4	1.6	
No Mental Disorders	7.6	0.5	
Vietnamese	1.6	0.6	
Filipino	1.5	0.5	
Chinese	1.2	0.4	P<0.001
Other Asians	2.8	1.0	

	Estimated Prevalence		
	(%)	SE	X² Test
Non-Latino Whites	8.0	0.6	

[a]Based on the World Mental Health Composite International Diagnostic Interview

[b]Includes agoraphobia with and without panic, generalized anxiety disorder, panic disorder, posttraumatic stress disorder, and social phobia

Table 3

Ethnic predictors of past-year antidepressant drug use in specific disorder groups from a nationally representative sample of Asians and non-Latino Whites (N=8980) in the United States.

	Bivariate Logit	
	OR	95% CI
All Ethnic Groups		
Vietnamese	0.18[*]	(0.10-0.31)
Filipino	0.15[*]	(0.09-0.24)
Chinese	0.18[*]	(0.12-0.28)
Other Asians	0.25[*]	(0.14-0.44)
Non-Latino Whites	1.00	--
12-Month Mental Disorders[a]		
Major Depression		
Vietnamese	0.14[*]	(0.04-0.51)
Filipino	0.20[†]	(0.05-0.86)
Chinese	0.29[†]	(0.09-0.90)
Other Asians	0.20[*]	(0.07-0.53)
Non-Latino Whites	1.00	--
Dysthymia		
Vietnamese	n/a	n/a
Filipino	n/a	n/a
Chinese	n/a	n/a
Other Asians	n/a	n/a
Non-Latino Whites	n/a	n/a
Anxiety[b]		
Vietnamese	0.41	(0.11-1.53)
Filipino	0.29[†]	(0.10-0.86)
Chinese	0.47[†]	(0.22-0.98)
Other Asians	0.14[*]	(0.05-0.41)
Non-Latino Whites	1.00	--
Any Mental Disorder		
Vietnamese	0.35[†]	(0.13-0.94)
Filipino	0.20[*]	(0.06-0.63)
Chinese	0.36[*]	(0.22-0.59)
Other Asians	0.19[*]	(0.08-0.44)
Non-Latino Whites	1.00	--
No Mental Disorders		
Vietnamese	0.18[*]	(0.09-0.38)
Filipino	0.17[*]	(0.09-0.33)

	Bivariate Logit	
	OR	95% CI
Chinese	0.14[*]	(0.07-0.26)
Other Asians	0.33[*]	(0.16-0.70)
Non-Latino Whites	1.00	--

[a]Based on the World Mental Health Composite International Diagnostic Interview

[b]Includes agoraphobia with and without panic, generalized anxiety disorder, panic disorder, posttraumatic stress disorder, and social phobia

[*]P ≤0.01

[†]P ≤0.05

[‡]P ≤0.10

Table 4

Predictors of past-year antidepressant use in a nationally representative sample of Asians and non-Latino Whites (N=8980).

	Model 1[d]		Model 2[d]		Model 3[d]	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Predisposing						
Ethnic Groups						
Non-Latino Whites	1.00	--	1.00	--	1.00	--
Vietnamese	0.30[*]	(0.15-0.60)	0.35[*]	(0.18-0.68)	0.33[*]	(0.16-0.67)
Filipino	0.23[*]	(0.13-0.41)	0.25[*]	(0.14-0.44)	0.18[*]	(0.08-0.39)
Chinese	0.28[*]	(0.16-0.50)	0.31[*]	(0.18-0.52)	0.35[*]	(0.20-0.60)
Other Asians	0.40[*]	(0.21-0.76)	0.44[†]	(0.23-0.87)	0.46[‡]	(0.21-1.02)
Age (years)						
Young Adult (18-34)	1.00	--	1.00	--	1.00	--
Adult (35-65)	1.77[*]	(1.42-2.22)	1.76[*]	(1.44-2.15)	1.69[*]	(1.28-2.22)
Older Adult (65+)	0.85	(0.58-1.23)	0.97	(0.63-1.49)	0.76	(0.44-1.31)
Sex						
Male	1.00	--	1.00	--	1.00	--
Female	2.60[*]	(2.14-3.15)	2.37[*]	(1.91-2.93)	2.82[*]	(2.15-3.70)
Acculturation/Nativity						
Low	1.00	--	1.00	--	1.00	--
High	1.86[*]	(1.21-2.88)	1.62[†]	(1.05-2.50)	1.51[‡]	(0.94-2.44)
Need						
12-Month Mental Disorders [a]						
No Disorders			1.00	--	1.00	--
Major Depression, Dysthymia, Anxiety[b]			4.87[*]	(3.82-6.20)	4.25[*]	(3.23-5.59)
Medical Conditions [c]						
No Medical Conditions			1.00	--	1.00	--
One or more condition			1.61[*]	(1.26-2.07)	1.61[*]	(1.20-2.17)
Enabling						

	Model 1[d]		Model 2[d]		Model 3[d]	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Education Groups (Years)						
<12					0.85	(0.56-1.29)
12					1.00	--
13 - 15					1.09	(0.79-1.52)
16 or more					0.95	(0.68-1.33)
Household Income Groups						
$0 - $17,999					1.38	(0.83-2.30)
$18,000 - $31,999					1.11	(0.72-1.73)
$32,000 - $54,999					1.00	--
$55,000 or more					1.01	(0.75-1.35)
Health Insurance Coverage						
No					1.00	--
Yes					1.82[†]	(1.01-3.27)
Financial Stress						
Not Difficult					1.00	--
Difficult					1.47*	(1.26-1.73)

[a] Based on the World Mental Health Composite International Diagnostic Interview

[b] Includes agoraphobia with and without panic, generalized anxiety disorder, panic disorder, posttraumatic stress disorder, and social phobia

[c] Includes heart disease, stroke, hypertension and diabetes

* P ≤0.01

[†] P ≤0.05

[‡] P ≤0.10