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Twelve-month prevalence of psychiatric disorders and treatment-seeking among Asian Americans/Pacific Islanders in the United States: Results from the National Epidemiological Survey on Alcohol and Related Conditions

Yang Xu, M.D.^a, Mayumi Okuda, M.D.^a, Yih-Ing Hser, Ph.D.^b, Deborah Hasin, Ph.D.^{a,c,d}, Shang-Min Liu, M.S.^a, Bridget F. Grant, Ph.D.^e, and Carlos Blanco, M.D., Ph.D.^{a,c}

^aNew York State Psychiatric Institute, New York, NY 10032

^bDepartment of Psychiatry and Behavioral Sciences at the UCLA, Los Angeles, CA 90025

^cNew York State Psychiatric Institute, Department of Psychiatry, College of Physicians and Surgeons, Columbia University, New York, NY 10032

^dDepartment of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY 10032

^eLaboratory of Epidemiology and Biometry, Division of Intramural Clinical and Biological Research, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, Bethesda, MD 20892

Abstract

To compare the 12-month prevalence of psychiatric disorders in Asian Americans/Pacific Islanders in contrast to non-Hispanic whites; and further compare persistence and treatment-seeking rates for psychiatric disorders among Asian American/Pacific Islanders and non-Hispanic whites, analyses from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions, Wave 1 (n = 43,093) were conducted for the subsample of 1,332 Asian Americans/Pacific Islanders (596 men and 736 women) and 24,507 non-Hispanic whites (10,845 men and 13,662 women). The past 12-month prevalence for any psychiatric disorder was significantly lower in Asian American/Pacific Islander males and females than non-Hispanic white males and females. Asian American/Pacific Islander males were less likely than non-Hispanic white males to have any mood, anxiety, substance use, and personality disorders, whereas the prevalence of mood disorders among Asian American/Pacific Islander females did not differ from those of non-Hispanic white females. In some cases, such as drug use disorders, both male and female Asian Americans/Pacific Islanders were more likely to have more persistent disorders than non-Hispanic whites. Compared to non-Hispanic white females, Asian American/Pacific Islander females had lower rates of treatment-seeking for any mood/anxiety disorders. Although less prevalent than among non-Hispanic whites, psychiatric disorders are not uncommon among Asian Americans/Pacific Islanders. The lower treatment seeking rates for mood/anxiety disorders in Asian

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Corresponding Author: Carlos Blanco, M.D., Ph.D., Professor of Clinical Psychiatry, New York State Psychiatric Institute, Department of Psychiatry, College of Physicians and Surgeons of Columbia University, 1051 Riverside Drive, unit 69, New York, New York 10032, cb255@columbia.edu, (W) 212-543-6533, (F) 212-543-6515.

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American/Pacific Islander females underscore the unmet needs for psychiatric service among this population.

Keywords

epidemiology; psychiatric disorders; Asian American; Pacific Islanders; mental health; treatment utilization

Asian Americans/Pacific Islanders total 15.2 million in the US, and over the past few years have experienced the largest percentage increase among the major ethnic groups 1·2. The US Census estimates that by year 2050 Asian Americans/Pacific Islanders will grow to 34 million and constitute 8% of the US population 3. In congruence with frameworks that seek to eliminate racial and ethnic disparities as central elements to national health care policies in the U.S. 4·6, research interest on mental health of Asian Americans/Pacific Islanders have been expanding.

Although clinical and community studies using selected samples of college students 7, refugees 8 or the elderly 9 have reported similar or even higher prevalence and severity scores for depression, anxiety, and post traumatic stress disorder (PTSD) in Asian Americans/Pacific Islanders than in non-Hispanic whites, large sample epidemiological studies have generally reported lower prevalence for most psychiatric disorders and lower rates of mental health service utilization among Asian Americans/Pacific Islanders 10·12.

The Chinese American Psychiatric Epidemiology Study (CAPES), which was conducted in Los Angeles County in the 1990s, reported that lifetime prevalence for major depression, dysthymia, generalized anxiety disorder, specific phobia, social anxiety disorder and panic disorder were 6.9%, 5.0%, 1.7%, 1.1%, 1.2% and 0.4% respectively 13. The more recent National Latino and Asian American Study (NLAAS) conducted in 2002–2003 reported that the lifetime and 12-month prevalence of any psychiatric disorder in Asian Americans were 17.30% and 9.19% respectively 10, lower than those in national samples of other ethnicities as reported in the National Comorbidity Survey Replication (NCS-R). 14·15

While these lower prevalence for psychiatric disorders might partially be explained by the lower poverty rates and higher educational levels in Asian Americans/Pacific Islanders 16–18, some studies suggest that the effect of socioeconomic status does not act with the same magnitude in ethnic minorities and non-minorities 19·20 Recent studies have shown that educational level does not seem to have the same significant positive relationship with self-rated health in Asian Americans/Pacific Islanders and as observed in Whites 21. Moreover, socioeconomic status of Asian Americans/Pacific Islanders has been changing rapidly over the last decades. For example, recent studies have suggested that gender interplays with race/ethnicity and socioeconomic status on affecting health inequity 22·23, psychological well-being 24 among Hispanics and Blacks 24. Additionally, although higher persistence for psychiatric disorders has been reported for other ethnic minorities such as Hispanics and Blacks 20, this issue has yet to be examined in Asian Americans/Pacific Islanders. Previous studies have also suggested that, among individuals who have been diagnosed with psychiatric disorders, mental health service utilization rates are lower in Asian Americans/Pacific Islanders than in Whites 25. However, whether those ethnic differences occur in both genders is unknown.

Although previous studies have provided valuable information about psychiatric disorders among Asian American population, important questions remain. The present study seeks to build on prior knowledge by drawing on a large and nationally representative

epidemiological study, the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) that included psychometrically sound measures of a broad range of psychiatric disorders. To fully characterize the mental health of Asian Americans/Pacific Islanders, we sought to address some of these questions by stratifying the analyses by gender, examining persistence, and adjusting for sociodemographic characteristics. To increase the comparability of our results with previous research on ethnic differences 20-26, non-Hispanic whites were considered the reference group in our study. Specifically, we sought to: (1) examine the 12-month prevalence of psychiatric disorders in Asian Americans/Pacific Islanders in contrast to non-Hispanic whites, stratified by gender; (2) compare the persistence of psychiatric disorders in male and female Asian Americans/Pacific Islanders and non-Hispanic whites; and, (3) estimate the rates of 12-month treatment-seeking among individuals with psychiatric disorders in male and female Asian Americans/Pacific Islanders with psychiatric disorders in contrast to non-Hispanic whites.

2. Methods

2.1 Sample

The 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) is a nationally representative sample of the adult population of the United States conducted by the US Census Bureau, which administered face-to-face interviews under the direction of the National Institute on Alcohol Abuse and Alcoholism, as described in detail elsewhere 27. The NESARC target population was the civilian, non-institutionalized population, 18 years or older, residing in households in the 50 states and the District of Columbia. The final sample included 43,093 respondents drawn from individual households and group quarters. African Americans, Hispanics, and young adults (aged 18 to 24 years) were oversampled. Data were adjusted to account for oversampling and respondent and household nonresponse. The overall survey response rate was 81%. Data were adjusted using the 2000 Bureau Census, to be representative of the US civilian population of a variety of sociodemographic variables.

Respondents in the NESARC were asked about their ethnic backgrounds and all Asian Americans/Pacific Islanders and non-Hispanic whites comprised the sample our study. Our sample included 1,332 Asian Americans/Pacific Islanders (596 men and 736 women) and 24,507 non-Hispanic whites (10,845 men and 13,662 women). Based on their country of origin or ascent, Asian Americans/Pacific Islanders could be classified as China/Taiwan, India/Afghanistan/Pakistan, Korea/Japan, Vietnam, Philippines, and “other Asian countries.” However, to be consistent with prior studies 26, all analyses were conducted considering all Asian Americans/Pacific Islanders as a single group, to maximize statistical power and obtain stable estimates.

2.2 Assessment

Psychiatric Diagnoses—All diagnoses were made according to DSM-IV criteria using the National Institute on Alcohol Abuse and Alcoholism Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV version (AUDADIS-IV) 28, a valid and reliable fully structured diagnostic interview designed for use by professional interviewers who are not clinicians.

Axis I diagnoses included in the AUDADIS-IV can be separated into 3 groups: (1) substance use disorders (including alcohol abuse or dependence, drug abuse or dependence, and nicotine dependence); (2) mood disorders (including major depressive disorder, dysthymia, and bipolar disorder); and (3) anxiety disorders (including panic disorder, social anxiety disorder, specific phobia, and generalized anxiety disorder). The test-retest

reliability of the AUDADIS-IV measures of DSM-IV diagnoses has been reported elsewhere 28. Test-retest reliability was good for major depressive disorder ($\kappa=0.65-0.73$) and good to excellent for substance use disorders ($\kappa=0.74$). Reliability was fair to good for other mood and anxiety disorders ($\kappa=0.40-0.60$) and personality disorders ($\kappa=0.40-0.67$). History of conduct disorder and personality disorders were assessed on a lifetime basis. The latter ones included DSM-IV avoidant, dependent, obsessive-compulsive, paranoid, schizoid, histrionic, and antisocial personality disorders. Personality disorder diagnoses required long-term patterns of social and occupational impairment and substance-induced cases were excluded as explained in detail elsewhere 29.

Two year persistence of Psychiatric Disorders—Disorders were considered persistent if their first onset occurred at least 2 years prior to the interview and were present in the 12 months preceding the interview 20. We present the prevalence of persistent disorders in both groups. To be consistent with prior work 20 the relationship between race-ethnicity and persistence was examined in logistic regression models, controlling for age, education, individual and family income, urbanicity, and region.

Mental Health and Substance Abuse Treatment—To estimate rates of mental health service utilization, respondents were classified as receiving treatment for mood or anxiety disorders if they: (1) visited a physician, psychologist, or any other professional; (2) were a patient in a hospital for at least 1 night; (3) visited an emergency department; or (4) were prescribed medications. Respondents were classified as receiving treatment for substance use disorders if they: (1) visited a physician, psychologist, or any other professional; (2) were a patient in an inpatient ward of a hospital, an outpatient clinic, a drug detoxification or rehabilitation unit, or a methadone program; (3) visited an emergency department or crisis center; or (4) received treatment by a paraprofessional (e.g., a member of the clergy), received treatment through an employee assistance program or through family or social services, or attended self-help groups. Treatment utilization questions were disorder specific, and analyses were conducted on those who were diagnosed with the disorder of interest. For instance, the prevalence of past-year treatment seeking for a mood disorder or anxiety disorder is calculated among those with a past-year diagnosis of a mood or anxiety disorder using treatment utilization questions specifically asked about treatment for a mood or anxiety disorder.

Sociodemographic and Socioeconomic Measures—Sociodemographic measures included nativity, age, education, marital status, place of residence, and region of the country. Socioeconomic measures included personal and family income (measured as categorical variables) as well as insurance type.

2.3 Statistical Analysis

Weighted means, frequencies, and odds ratios (ORs) of sociodemographic correlates, prevalence and persistence of psychiatric disorders, and rates of treatment seeking were computed. To provide a description of observable outcomes most relevant from the perspective of need for provision of services, we focus our analyses on the unadjusted ORs. We also provide adjusted ORs derived from multiple logistic regressions, which indicate associations between a specific outcome (e.g., psychiatric disorders or rates of treatment seeking) and sociodemographic correlates that differed between Asian Americans/Pacific Islanders and non-Hispanic whites. Due to the cross-sectional nature of the study, both unadjusted and adjusted ORs are used as measures of association without implying any causal association. We consider 2 percentages to be different if the 95% confidence interval of their OR does not include 1 30. All standard errors and 95% confidence intervals were estimated using SUDAAN to adjust for design characteristics of the survey. Analyses were

stratified by gender. For all of the analyses, non-Hispanic whites were considered the reference group.

3. Results

Sociodemographic Correlates

Our Asian American sample was comprised by individuals from different Asian countries of origin or descent. These included China/Taiwan (males 24.1%, females 23.3%), India/Afghanistan/Pakistan (males 17.2%, females 14.0%), Korea/Japan (males 15.9%, females 20.5%), Vietnam (males 6.8%, females 8.0%), Philippines (males 14.1%, females 13.6%), and others (males 21.9%, females 20.6%).

Compared to non-Hispanic whites, both male and female Asian Americans/Pacific Islanders were more likely to be foreign-born. Odds ratios for nativity were large, consistent with data from the U.S. Census 1², due to the high percentage of foreign-born Asian Americans/Pacific Islanders and relatively low percentage of foreign-born non-Hispanic whites in the US population 31. Both male and female Asian Americans/Pacific Islanders had greater odds of having no insurance and lower odds than non-Hispanic whites of being older than 45 years, having high school education compared to college education, being widowed, or living in rural areas. They were less likely than non-Hispanic whites to be living in the Northeast, Midwest, or South (Table 1).

Compared to non-Hispanic white males, Asian American males were less likely to be 30–44 years old, have lower than high school education compared to college education, and having individual income between \$20,000–69,000. They had greater odds of never been married. Asian American females had greater odds of having public insurance than non-Hispanic white females.

Twelve-month Prevalence of Psychiatric Disorders

The 12-month prevalence for any psychiatric disorder was 23.6% and 37.9% for Asian American and non-Hispanic males, respectively. The 12-month prevalence among Asian Americans/Pacific Islanders females was 22.3% and 35.7% among non-Hispanic white females. In the unadjusted analysis, the odds for any psychiatric disorder, any axis I disorder, any substance use disorder, any alcohol use disorder, alcohol abuse, nicotine dependence, any anxiety disorder, and specific phobia were lower in Asian American males and females compared to their non-Hispanic white counterparts. Furthermore, Asian American males had lower odds for any mood disorder and bipolar I disorder than non-Hispanic males. Asian American females had lower odds for panic disorder and social anxiety disorder than non-Hispanic females.

The odds of having a personality disorder were lower in both male and female Asian Americans/Pacific Islanders than non-Hispanic whites. Both male and female Asian Americans/Pacific Islanders were less likely than non-Hispanic whites to have obsessive-compulsive personality disorder and antisocial personality disorder. Asian American/Pacific Islander females had lower odds for schizoid personality disorder than non-Hispanic white females (Table 2).

Some of the findings regarding the ethnic differences for past 12 month disorders were no longer significant after adjusting for sociodemographic and socioeconomic variables. However, there was never a change in the direction of the differences. The lower odds for dependant personality disorder became significant in the adjusted analyses in males.

When comparing individuals with 12-psychiatric disorders Asian American/Pacific Islanders were more likely than non-Hispanic whites to be foreign-born, younger, to have at least some college education but lower income, to be married, live in the West and live in an urban setting (Table 3).

Persistence of Disorders

The odds of persistence for any drug use disorder, alcohol and drug abuse were higher in Asian American males, whereas the odds of persistence of any mood disorder were lower. The odds of persistence for any drug use disorder, drug dependence and generalized anxiety disorder were higher in Asian American females. After adjusting for sociodemographic characteristics, the difference of persistence of psychiatric disorders was no longer significant for any drug use disorder and alcohol abuse in males and for drug dependence in females (Table 4).

Mental Health and Substance Abuse Treatment

Past treatment seeking rates for any mood/anxiety disorders among males were 36.5% and 25.4% for Asian American/Pacific Islanders and non-Hispanic whites, respectively. Among females, treatment seeking rates for any mood/anxiety disorders were 16.8% and 34.8% for Asian American/Pacific Islanders and non-Hispanic whites, respectively. The odds of past year treatment seeking for any mood/anxiety disorder was 0.4 for Asian American/Pacific Islanders females compared to non-Hispanic females.

Past year treatment seeking rates for alcohol/drug use disorders among males were 6.1% and 6.2% for Asian American/Pacific Islanders and non-Hispanics whites, respectively. Among females, treatment seeking rates for any alcohol/drug use disorders were 11.0% and 6.3% for Asian American/Pacific Islanders and non-Hispanic whites, respectively. No significant differences in likelihood of treatment seeking for alcohol/drug use disorders were found among male and female American/Pacific Islanders and non-Hispanics whites (Table 5).

4. Discussion

We examined a broad spectrum of Axis I and Axis II DSM-IV disorders in a nationally representative sample of Asian American adults stratified by gender. Compared to non-Hispanic whites, Asian Americans/Pacific Islanders males and females had lower 12-month prevalence rates of most psychiatric disorders. Some gender differences were also noted. Comparing with non-Hispanic white males, Asian American males were less likely to have any mood, anxiety, substance use disorders and personality disorders, whereas, comparing with non-Hispanic white females, Asian American females were less likely to have any anxiety, substance use and personality disorders but equally likely to have mood disorders. In some cases, such as drug use disorders, the percentage of individuals with persistent disorders was higher both in male and female Asian Americans/Pacific Islanders than in non-Hispanic whites. Asian Americans/Pacific Islanders females had lower rates of treatment-seeking for any mood/anxiety disorders than non-Hispanic white females.

Consistent with prior reports, we found that prevalence of psychiatric disorders were lower among Asian Americans/Pacific Islanders than among non-Hispanic whites 32-33. A potential explanation for these findings is that many psychiatric disorders co-occur and play a role in the etiology of other disorders 34-36. Lower prevalence of certain disorders, such as substance use disorders, may partially contribute to the lower prevalence other disorders such as mood and anxiety disorders.

A second potential explanation for the lower prevalence of psychiatric disorders among Asian-Americans could be socioeconomic disparity. The higher average educational level of

Asian Americans/Pacific Islanders than that of non-Hispanic whites theoretically may also help decrease the risk of psychopathology associated with poverty and related social disadvantages 16–18. However, in our data, prevalence patterns of most psychiatric disorders remained practically unchanged after adjusting for sociodemographic factors, indicating that socioeconomic factors probably only have a limited impact in explaining ethnic differences in the prevalence of psychiatric disorders.

A third potential explanation is cultural. Traditional Asian culture has been suggested to exert a protective role on mental health, through the promotion of particular values such as a strong sense of family orientation 37–38 or the existence of supportive social networks 39–40. It is also possible that DSM-IV categorizations may not fully appropriately describe the psychiatric symptoms and syndromes of Asian Americans/Pacific Islanders, which may lead to underestimation of the true prevalence of disorders among Asian Americans/Pacific Islanders. Most Asian cultures conceive the body and mind as unitary rather than dualistic. Therefore, some Asian American individuals may focus more on physical than on emotional symptoms, which may lead to misdiagnosis and underestimation of prevalence 41. Lastly, fear of stigmatization might be more prevalent among Asian Americans/Pacific Islanders than among non-Hispanic whites, making Asian Americans/Pacific Islanders more reluctant to report psychiatric symptoms 42–43, which may further contributing to prevalence underestimation.

Although prevalence of psychiatric disorders was generally lower among Asian Americans/Pacific Islanders than among non-Hispanic whites, for some disorders the rate of persistence was similar across races. The similarity in rates of persistence among Asian Americans/Pacific Islanders and among non-Hispanic whites is surprising in view of the documented differences in prevalence in this and previous studies 10–12. One possible reason for this discrepancy could be that Asian Americans with psychiatric disorders may lack certain protective factors (e.g., have different genetic liability or level of exposure to environmental factors) that contribute to the lower prevalence of disorders among the general population of Asian Americans/Pacific Islanders, or have additional risk factors that offset the effect of protective factors. It is also possible that certain risk or protective factors may have different power in affecting the estimate of prevalence of disorders and in affecting estimate of persistence. For example, problems with underdiagnosis or misdiagnosis of psychiatric disorders may be important for assessing prevalence but less relevant in evaluating persistence, once an initial diagnosis has been established. Alternatively, delay and inadequacy of treatment, which is more common among ethnic minorities, may lead to functional or neuroanatomical changes in those with severe diseases and lead to greater chronicity of disorders. 44–45

Our study found only a few gender-specific ethnic differences, suggesting that most protective factors for psychopathology are shared among male and female Asian Americans/Pacific Islanders. However, the prevalence of some specific psychiatric disorders, such as social anxiety disorder, was significantly lower in Asian American females than in non-Hispanic white females, whereas no significant difference was observed in Asian American males and in non-Hispanic males. Some ethnic protective and risk factors may be gender-specific for particular disorders disorders.

While data from NLAAS found that treatment seeking rates for psychiatric disorders among Asian Americans/Pacific Islanders were lower than among non-Hispanic whites, 46 we only found lower treatment seeking rates in Asian American females for mood/anxiety disorders. Such gender-specific ethnic differences in treatment seeking may have been concealed in previous studies lacking gender stratification 46–50 Alternatively, differences between this and previous studies may due to a time effect. Most epidemiological studies examining

mental health treatment among Asian Americans/Pacific Islanders were conducted a decade ago 47–50. Efforts to promote mental health education and service outreach among the Asian American community 51 during the past decade may have had a stronger effects in males than females, thus erasing ethnic differences in treatment-seeking among men, but not women.

Several factors may influence lower treatment rates among Asian American than non-Hispanic white females. Treatment models requiring self-disclosure and emotional expressiveness may oppose Asian cultural values based on family hierarchy, emotional restraint, and avoidance of shame 52–54. In some Asian cultures, receiving treatment outside the family may be perceived as shameful, disgraceful, or as a violation of this family hierarchical model 53. It is also possible that Asian Americans/Pacific Islanders, particularly women, may rely, more often than non-Hispanic whites, on religious services, the elders, or ethnic organizations common in Asian cultures, 55 thus decreasing their interest and need to enter treatment models more accepted in Western culture. Moreover, lack of ethnic match and cultural congruence in mental health service, and provision of lower quality of care or less desirable venues 56–57 may also in some cases discourage treatment-seeking or interfere with retention 58–59. Ethnic-specific programs can successfully increase treatment entry among Asian Americans/Pacific Islanders 60, reduce premature dropout 61–63 and improve outcomes 64. Provision of evidence-based care in the context of patient treatment preferences 65 can help improve the quality of care and decrease treatment disparities. There is a continued need to improve the accessibility and quality of care for Asian Americans/Pacific Islanders 66.

Our study has limitations common to most large-scale surveys. First, because the NESARC sample only included civilian households and group quarters with populations 18 years and older, information was unavailable on adolescents or individuals in prison. Second, cross-sectional design using retrospective measures making our findings subject to recall and reporting biases. Third, the mental health treatment results, relying on respondents' linkage to specific disorders, may underestimate the proportion of Asian Americans/Pacific Islanders who received any mental health care during the past year. Fourth, mental health treatment questions yielded information about lifetime treatment-seeking rates, which cannot fully illustrate the quality and quantity of mental health services. Fifth, although this was the largest epidemiological sample to examine psychiatric disorders in the United States, we did not examine specific subgroups of Asians, which would have resulted in small sample sizes and unreliable statistical estimates. Sixth, the validity of DSM-IV may differ across cultures and complicate the assessment of some conditions such as personality disorders. Though definition of persistence in our study was consistent with that of a previous study 20 on other ethnic minorities, it is possible that a different operationalization could have yielded different results. Finally, comparison between Asian Americans/Pacific Islanders and other ethnic groups may result fewer gender differences. However, use of non-Hispanic whites as the reference group in our study increases comparability with previous research on ethnic differences.

Despite these limitations, the NESARC constitutes the largest nationally representative survey to date to examine the similarities and differences of mental health and its correlates among Asian Americans/Pacific Islanders and non-Hispanic whites. Our study indicates that Asian Americans/Pacific Islanders have lower prevalence of past 12 month psychiatric disorders and those treatment-seeking rates for mood/anxiety disorders are lower among Asian American females than non-Hispanic white females. Greater efforts are needed to provide culturally competent care to meet the needs of this growing, underserved population.

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Table 1
Sociodemographic characteristics of Asian Americans/Pacific Islanders and Non-Hispanic Whites

Characteristic	Males N=11,441				Females N=14,398			
	Asian Americans/Pacific Islanders (n=596)		Non-Hispanic Whites* (n=10,845)		Asian Americans/Pacific Islanders (n=736)		Non-Hispanic Whites* (n=13,662)	
	%	SE	%	SE	%	SE	%	SE
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Characteristic	Males N=11,441						Females N=14,398					
	Asian Americans/Pacific Islanders (n=596)			Non-Hispanic Whites* (n=10,845)			Asian Americans/Pacific Islanders (n=736)			Non-Hispanic Whites* (n=13,662)		
	%	SE	%	%	SE	OR	%	SE	%	%	SE	OR
Marital Status												
Married*	67.03	1.82	66.37	0.56		1.00	66.35	2.23	62.12	0.56		1.00
Widowed	5.34	1.11	12.35	0.34	0.43	(0.28–0.66)	13.13	1.43	22.95	0.43	0.54	(0.42–0.69)
Never Married	27.63	1.87	21.28	0.54	1.29	(1.07–1.54)	20.52	2.08	14.93	0.42	1.29	(0.99–1.67)
Urbanicity												
Urban*	94.90	1.62	76.98	1.73		1.00	94.83	1.23	77.46	1.72		1.00
Rural	5.10	1.62	23.02	1.73	0.18	(0.10–0.34)	5.17	1.23	22.54	1.72	0.19	(0.12–0.29)
Region												
Northeast	20.04	7.05	20.71	3.19	0.37	(0.17–0.80)	19.99	7.83	20.78	3.24	0.38	(0.17–0.85)
Midwest	12.79	3.61	27.07	3.05	0.18	(0.10–0.31)	12.24	4.20	26.65	3.07	0.18	(0.10–0.33)
South	17.92	4.58	33.35	2.83	0.21	(0.12–0.37)	19.01	4.37	33.51	2.90	0.22	(0.14–0.36)
West*	49.25	9.07	18.87	2.68		1.00	48.76	8.38	19.06	2.72		1.00
Insurance												
Public	8.56	1.52	10.06	0.37	0.94	(0.62–1.42)	13.75	1.38	12.10	0.34	1.32	(1.03–1.67)
Private*	67.24	3.25	74.11	0.66		1.00	63.91	2.75	74.00	0.60		1.00
No insurance	24.20	2.75	15.83	0.50	1.69	(1.24–2.30)	22.34	2.67	13.90	0.45	1.86	(1.37–2.53)

* Reference group

Table 2

Twelve-Month Prevalence and Adjusted Odds Ratios (AOR) of DSM-IV Disorders for Asian Americans/Pacific Islanders and Non-Hispanics Whites

	Males						Females																								
	Asian Americans/Pacific Islanders			Non-Hispanic Whites*			OR			AOR**			Asian Americans/Pacific Islanders			Non-Hispanic Whites*			OR			AOR**									
	%	SE		%	SE		OR	95% CI	OR	95% CI	OR	95% CI	%	SE		%	SE		OR	95% CI	OR	95% CI	%	SE		%	SE		OR	95% CI	OR
Any Psychiatric diagnosis	23.57	2.14	37.87	0.74	0.51	(0.40–0.64)	0.59	(0.43–0.82)	22.25	2.11	35.73	0.69	0.51	(0.41–0.65)	0.59	(0.47–0.76)															
Any Axis I Disorder	18.59	1.81	31.76	0.68	0.49	(0.39–0.62)	0.55	(0.40–0.77)	18.39	1.09	31.19	0.64	0.50	(0.39–0.63)	0.06	(0.47–0.78)															
Any Substance Use disorder	13.06	1.33	24.50	0.60	0.46	(0.36–0.59)	0.53	(0.36–0.79)	5.84	0.89	16.68	0.44	0.31	(0.23–0.43)	0.44	(0.31–0.63)															
Any Alcohol Use Disorder	6.76	1.04	12.86	0.43	0.49	(0.35–0.70)	0.56	(0.32–1.01)	2.47	0.59	5.29	0.25	0.45	(0.27–0.75)	0.44	(0.24–0.79)															
Alcohol Abuse	3.20	0.79	7.45	0.33	0.41	(0.25–0.69)	0.55	(0.25–1.20)	1.13	0.41	2.92	0.19	0.38	(0.18–0.81)	0.41	(0.16–1.03)															
Alcohol Dependence	3.56	0.74	5.41	0.26	0.64	(0.41–1.01)	0.62	(0.32–1.21)	1.34	0.49	2.37	0.16	0.56	(0.26–1.21)	0.50	(0.23–1.08)															
Any Drug Disorder	2.11	0.78	2.70	0.20	0.78	(0.36–1.70)	0.70	(0.28–1.77)	0.72	0.36	1.22	0.12	0.59	(0.21–1.65)	0.63	(0.22–1.79)															
Drug Abuse	1.96	0.78	2.16	0.16	0.91	(0.39–2.09)	0.85	(0.32–2.26)	0.46	0.29	0.99	0.11	0.46	(0.13–1.69)	0.40	(0.13–1.21)															
Drug Dependence	0.40	0.22	0.79	0.11	0.50	(0.16–1.57)	0.46	(0.08–2.60)	0.40	0.25	0.32	0.05	1.23	(0.34–4.46)	2.40	(0.49–11.75)															
Nicotine Dependence	8.33	1.08	15.70	0.46	0.49	(0.36–0.65)	0.53	(0.34–0.83)	4.53	0.74	12.95	0.39	0.32	(0.23–0.45)	0.56	(0.37–0.85)															
Any Mood Disorder	3.90	0.85	6.48	0.25	0.59	(0.37–0.93)	0.68	(0.42–1.12)	8.62	1.31	10.61	0.36	0.79	(0.57–1.12)	0.96	(0.67–1.37)															
MDD	2.84	0.80	3.70	0.20	0.76	(0.42–1.37)	1.01	(0.57–1.78)	5.32	1.08	7.22	0.27	0.72	(0.47–1.12)	0.91	(0.58–1.44)															
Bipolar I	0.57	0.28	1.86	0.14	0.30	(0.11–0.82)	0.42	(0.13–1.38)	1.38	0.51	2.22	0.17	0.61	(0.28–1.34)	0.65	(0.29–1.47)															
Bipolar II	0.40	0.22	0.59	0.09	0.67	(0.21–2.17)	0.33	(0.07–1.44)	0.18	0.17	0.64	0.08	0.28	(0.04–1.85)	0.58	(0.10–3.53)															
Dysthymia	0.48	0.30	0.91	0.10	0.53	(0.15–1.83)	0.93	(0.32–2.74)	1.79	0.64	1.87	0.15	0.96	(0.46–2.00)	1.08	(0.48–2.47)															
Any Anxiety Disorder	4.77	1.09	8.16	0.33	0.56	(0.35–0.91)	0.65	(0.40–1.03)	8.82	1.19	14.97	0.47	0.55	(0.41–0.73)	0.65	(0.48–0.89)															
Panic disorder	0.45	0.27	1.46	0.13	0.31	(0.09–1.03)	0.30	(0.08–1.19)	0.98	0.39	3.18	0.17	0.30	(0.14–0.67)	0.43	(0.15–1.23)															

	Males						Females					
	Asian Americans/Pacific Islanders			Non-Hispanic Whites			Asian Americans/Pacific Islanders			Non-Hispanic Whites		
	%	SE		%	SE		%	SE		%	SE	
			OR	95% CI	OR	AOR**						
Social Anxiety Disorder	2.22	0.73	0.98	(0.49–1.94)	1.01	(0.50–2.06)	2.04	0.46	3.69	0.21	0.54	(0.34–0.87)
												0.60 (0.31–1.16)
Specific Phobia	2.17	0.59	0.43	(0.25–0.76)	0.46	(0.25–0.82)	5.96	1.11	9.94	0.37	0.57	(0.39–0.85)
												0.77 (0.52–1.15)
Generalized Anxiety Disorder	0.89	0.37	0.64	(0.28–1.44)	1.57	(0.54–4.58)	1.35	0.52	2.92	0.18	0.46	(0.21–1.00)
												0.50 (0.23–1.08)
Any Personality Disorder***	11.28	1.76	0.69	(0.48–0.97)	0.76	(0.49–1.16)	8.99	1.25	13.75	0.42	0.62	(0.46–0.83)
												0.66 (0.47–0.93)
Avoidant	2.50	0.69	1.32	(0.75–2.33)	1.46	(0.84–2.53)	1.98	0.56	2.94	0.19	0.67	(0.37–1.21)
												0.83 (0.43–1.62)
Dependent	0.27	0.20	0.71	(0.20–2.54)	0.28	(0.08–0.97)	0.66	0.26	0.65	0.08	1.02	(0.45–2.29)
												0.71 (0.26–1.95)
Obsessive-Compulsive	5.39	0.88	0.62	(0.44–0.88)	0.60	(0.36–1.00)	4.85	0.79	8.18	0.33	0.57	(0.41–0.81)
												0.63 (0.42–0.95)
Paranoid	2.72	1.11	0.82	(0.35–1.95)	0.56	(0.19–1.66)	4.04	0.73	4.02	0.23	1.01	(0.68–1.48)
												1.12 (0.71–1.77)
Schizoid	1.62	0.63	0.21	(0.25–1.23)	0.68	(0.32–1.47)	1.23	0.39	2.67	0.17	0.45	(0.24–0.87)
												0.43 (0.22–0.85)
Histrionic	1.82	0.58	1.01	(0.54–1.91)	0.92	(0.40–2.13)	1.82	0.53	1.70	0.13	1.07	(0.58–1.98)
												1.24 (0.69–2.21)
Antisocial	3.24	0.83	0.56	(0.33–0.96)	0.77	(0.33–1.81)	0.39	0.21	1.74	0.13	0.22	(0.07–0.66)
												0.22 (0.06–0.74)

* Reference group

** AOR is adjusted for age, education, individual income, family income, urbanicity, and region

*** Assessed on a lifetime basis

Table 3

Sociodemographic characteristics of Asian Americans/Pacific Islanders and non-Hispanic Whites with a 12-month psychiatric disorder

	Asians		Non-Hispanic Whites				
	%	SE	%	SE	Chi-square	df	p-value
Nativity							
US-born(ref)	33.01	4.30	96.34	0.34	42.28	1	<0.0001
Foreign-born	66.99	4.30	3.66	0.34			
Age							
18–29(ref)	37.92	4.21	24.93	0.64	3.16	3	0.0304
30–44	29.35	2.66	33.53	0.57			
45–64	25.46	3.30	31.73	0.56			
65+	7.27	2.58	9.80	0.34			
Education							
< High School	15.82	3.07	11.84	0.48	9.85	2	0.0002
High School	16.79	2.10	30.88	0.73			
College(ref)	67.39	3.98	57.29	0.87			
Individual Income							
0–19K(ref)	52.31	2.96	46.39	0.82	3.23	3	0.0281
20–34K	15.97	2.25	23.36	0.57			
35–69K	22.30	2.61	22.17	0.64			
>70K	9.41	2.22	8.07	0.52			
Family Income							
0–19K(ref)	26.42	2.55	21.66	0.68	1.67	3	0.1826
20–34K	15.30	2.81	20.71	0.54			
35–69K	32.81	4.24	32.90	0.59			
>70K	25.47	3.23	24.73	0.88			
Marital Status							
Married(ref)	56.23	3.04	58.15	0.67	9.46	2	0.0002
Widowed	8.15	1.56	19.22	0.52			
Never Married	35.62	3.12	22.63	0.62			

	Asians		Non-Hispanic Whites				
	%	SE	%	SE	Chi-square	df	p-value
Urbanicity							
Urban(ref)	90.99	2.86	76.59	1.75	13.04	1	0.0006
Rural	9.01	2.86	23.41	1.75			
Region							
Northeast	14.83	5.05	19.14	2.87	4.89	3	0.0040
Midwest	11.94	3.36	28.93	2.95			
South	17.95	4.29	31.89	2.67			
West(ref)	55.28	7.90	20.04	2.64			
Insurance							
Public	11.92	2.03	11.04	0.38	0.50	2	0.6062
Private(ref)	67.72	2.94	70.76	0.72			
No insurance	20.36	2.67	18.20	0.59			

Table 4
Persistence of Psychiatric Disorders among Asian Americans/Pacific Islanders and non-Hispanic Whites

	Males						Females					
	Asians Americans/Pacific Islanders			Non-Hispanic Whites*			Asians Americans/Pacific Islanders			Non-Hispanic Whites*		
	%	SE	OR	%	SE	OR	%	SE	OR	%	SE	OR
Any Axis I Disorder	48.12	3.62	0.99	48.33	0.75	0.99	61.13	4.22	0.85	56.85	0.72	1.19
Any Substance Use disorder	40.24	4.21	1.14	37.10	0.79	1.14	44.17	6.64	1.00	34.08	0.80	1.53
Any Alcohol Use Disorder	31.13	5.38	1.58	22.20	0.71	1.58	25.02	7.48	1.28	16.65	0.79	1.67
Alcohol Abuse	26.98	7.27	2.21	14.32	0.72	2.21	15.79	8.14	2.03	11.20	0.85	1.49
Alcohol Dependence	25.55	7.02	2.03	14.46	0.98	2.03	25.68	12.46	1.73	12.30	1.11	2.46
Any Drug Disorder	34.22	9.68	3.09	14.42	0.96	3.09	38.73	15.08	2.98	10.10	0.97	5.62
Drug Abuse	38.10	11.94	5.13	10.70	0.95	5.13	23.77	15.69	5.39	7.44	1.01	3.88
Drug Dependence	17.93	12.46	1.66	11.64	1.98	1.66	43.55	24.57	1.32	6.91	1.60	10.40
Nicotine Dependence	27.78	6.22	0.89	30.12	1.14	0.89	34.47	7.38	0.84	30.52	1.09	1.20
Any Mood Disorder	22.63	5.58	0.51	36.53	1.39	0.51	38.59	4.86	0.50	36.40	1.00	1.10
MDD	22.96	6.84	0.80	27.21	1.51	0.80	28.35	5.35	0.78	30.26	1.07	0.91
Bipolar I	17.43	11.88	0.26	45.28	2.96	0.26	69.48	12.45	0.25	50.07	2.47	2.27
Bipolar II	18.86	17.47	0.41	36.44	5.35	0.41	0.00	0.00	0.28	24.81	3.41	N/A
Dysthymia	15.25	11.38	0.31	37.01	3.64	0.31	43.51	14.48	0.28	37.28	2.07	1.30
Any Anxiety Disorder	49.80	7.68	0.79	55.63	1.53	0.79	66.00	5.70	0.76	62.13	1.02	1.18
Panic disorder	21.93	14.25	2.42	28.32		2.42	18.02	8.57	0.75	30.13	1.64	0.51
Social Anxiety Disorder	61.03	9.88	1.79	46.71	2.50	1.79	45.49	10.41	1.74	54.84	2.06	0.69
Specific Phobia	52.30	10.69	0.48	69.46	2.02	0.48	69.85	8.59	0.47	72.24	1.22	0.89
Generalized Anxiety Disorder	18.32	12.31	0.49	31.28	2.61	0.49	71.92	12.74	0.45	30.05	1.76	5.96

* Reference group

** AOR is adjusted for age and nativity

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