English language proficiency and mental health service use among Latino and Asian Americans with mental disorders

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Abstract

Objective—The impact of language proficiency as a potential contributor to ethnic disparities in mental health care has received less attention than other factors. Data from the National Latino and Asian American Study were examined to assess the impact of limited English proficiency (LEP) on access to and quality of mental health care for community-dwelling Latino and Asian Americans with mental disorders.

Methods—English-proficient (EP) and LEP individuals with mental disorders were compared on lifetime use of healthcare services for a mental disorder, duration of untreated disorders, receipt of minimally adequate care, and barriers to treatment (e.g. lack of identification of need for treatment, language barriers, and embarrassment or discomfort related to treatment).

Results—Compared to EP individuals, LEP individuals with mental disorders were significantly less likely to identify a need for mental health services, experience longer duration of untreated disorders, and use fewer healthcare services for mental disorders, particularly specialty mental health care. Receipt of minimally adequate care did not differ significantly by language proficiency. Embarrassment and discomfort were not more common among LEP individuals. Perceived need for treatment predicted lifetime mental healthcare use, whereas embarrassment and discomfort did not.

Conclusions—Among Latino and Asian Americans with mental disorders, LEP contributes to disparities in access to care and longer duration of untreated disorders. Potential disparities in quality of care were difficult to detect in the context of low overall rates of mental healthcare use and quality of care among both LEP and EP individuals.

Keywords

Mental disorders; health disparities; access to care; quality of care

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Introduction

Individuals with limited English proficiency (LEP) are a rapidly growing segment of the United States population. [1, 2] Language proficiency influences access to medical services and may contribute to health outcome disparities. [3–6] Ethnic minorities are less likely to be treated for mental disorders or receive guideline-concordant care, [7, 8] and foreign-born minorities use fewer mental health services than their US-born counterparts. [9–11] However, the potential role of language proficiency as a contributor to these patterns is not well-characterized.

In California, fewer LEP than English-proficient (EP) individuals used outpatient mental health services in the past year despite being equally likely to perceive a need. [12] Data from the National Latino and Asian American Study (NLAAS) [10, 11] similarly revealed that among Latinos, LEP was associated with lower use of any past-year services or specialty care. However, differences related to language were not significant for use of medical services for mental disorders, among Latinos with current mental disorders, or among Asian Americans. [10, 11] Studies addressing quality of care have demonstrated favorable patterns of service use among LEP individuals including greater entry to care through outpatient settings, [13, 14] with higher treatment intensity in clinics with language services. [13] However, these studies did not address lifetime service use, the length of time untreated, receipt of minimally adequate care, or barriers to treatment. Studies focusing on select geographic area [12–14] are not nationally representative, whereas studies focusing on current service use, [10, 11] specialty service use, [12–14] or severely mentally ill patients [13, 14] provide an incomplete characterization of healthcare utilization for mental disorders. Moreover, some studies utilized administrative records of language preference for care which is not equivalent to self-reported English proficiency [13, 14] or have not assessed the presence of a mental disorder, which impacts need for treatment. [12]

Given that delays in obtaining care following the onset of a mental disorder contribute substantially to unmet need for treatment, [15, 16] the present study adds to the literature by examining the association between language proficiency and lifetime healthcare use for mental disorders among Latino and Asian Americans with mental disorders. Potential barriers to treatment are considered, including perceived need for treatment, attitudinal barriers, and disorder severity. We hypothesize that compared to EP individuals, LEP individuals will (a) have greater levels of unmet need for treatment as evidenced by lower rates of accessing care and longer duration of untreated disorders; (b) be less likely to identify themselves as needing treatment; (c) report more barriers; and (d) be less likely to receive minimally adequate care.

Methods

Sample and Participants

This study utilized data from the National Latino and Asian American Study (NLAAS), which surveyed a nationally-representative sample of 2554 Latino and 2095 Asian American non-institutionalized adults in the United States in 2002–2003. Details of the design and sampling procedures have been described previously. [17, 18] Participants spoke English, Spanish, Mandarin, Cantonese, Vietnamese, or Tagalog. The weighted response rates were 75.5% for Latinos and 65.6% for Asian Americans.

Measures

Language Proficiency and Sociodemographic Variables—Participants were asked "How well do you speak English?" with responses coded dichotomously as "poor/fair" or

"good/excellent". [3, 10] Similar classifications have performed well in other studies. [19] Age, gender, race, ethnicity, marital status, household income, education, insurance status, and nativity were collected.

Psychiatric Diagnosis and Disorder Severity—The presence of a lifetime or 12-month DSM-IV disorder was assessed with the World Mental Health survey initiative's World Health Organization Composite International Diagnostic Interview [20] and is based on the presence of at least one disorder in any of the following categories: (a) mood disorder (major depressive or dysthymic disorders); (b) anxiety disorder (panic disorder, generalized anxiety disorder, agoraphobia, social phobia, or posttraumatic stress disorder); or (c) substance use disorder (alcohol or drug abuse or dependence). Age of onset for each disorder was determined retrospectively as described by Breslau et al. [21] Participants were asked "Can you remember your *exact age* the *very first time* you (had the syndrome)?" If the participant could not recall, more questions were asked for a range of uncertainty by moving up the age range incrementally (e.g., "Was it before you first started school?" "Was it before you became a teenager?" and so forth). Age of onset was set at the upper end of the range (e.g., age 5 for onset before school started).

Because greater disorder severity is associated with increased likelihood of receiving treatment, [15, 22, 23] severity was classified by modifying the criteria for severity of 12-month disorders from the National Comorbidity Survey Replication and the World Mental Health Surveys,[23–25] to apply to lifetime disorders. Thus, participants with severe disorders had: (a) substance dependence with physiological dependence or frequent role impairment; (b) suicide attempt with serious intent; (c) an impulse control disorder with repeated assaultive behavior; or (d) any disorder that resulted in severe role impairment in at least 2 functional domains on the Sheehan Disability Scale; or 30 or more days of disability in the last year; or a global assessment of functioning of less than 50 in the last 3 months. Participants not classified as severe had moderate disorders if they had: (a) any substance dependence disorder; (b) any lifetime suicide attempt or suicidal ideation or plan; or (c) any disorder that resulted in moderate role impairment in at least 2 domains on the Sheehan Disability scale. All other participants with lifetime disorders were classified as having mild disorders.

Access to Care—Participants were asked if they used various services for mental disorders in their lifetime and within the past year. Retrospective age at time of initial use of each service was obtained. For example, participants were asked "How old were you the first time you talked to a psychiatrist about your emotions, nerves, or mental health (or your use of alcohol or drugs)?" with similar questions for use of services by general medical providers (general practitioner, other medical doctor, nurse, occupational therapist, or other health professional) and specialists (psychiatrist, psychologist or any other mental health professional).

Barriers to Care—Self-identified need for treatment was present for participants who answered affirmatively to the question "At any time in your life did you think that you should talk to a medical doctor or other health professional about problems with your emotions, nerves, mental health, or your use of alcohol or drugs?". A similar question asked whether a family member, friend, co-worker or other person told the participant to talk to a professional. All participants responded to two questions about concerns regarding treatment: "How comfortable would you feel talking about personal problems with a professional" (reverse coded) and "How embarrassed would you be if your friends knew you were getting professional help for an emotional problem" (each coded dichotomously as "very/somewhat" or "not very/not at all").

Participants with past-year healthcare use were asked how long they thought they needed to see a professional before starting treatment and whether they could communicate with their provider in their preferred language. Individuals initiating treatment more than 4 weeks after identifying a need were asked about 19 potential barriers to care (e.g., "My health insurance would not cover treatment", "I was unsure about where to go or who to see", "I thought I would not be able to communicate because of linguistic barriers").

Quality of Care—The quality of care for individuals who accessed 12-month services was determined by applying criteria used in the World Mental Health Survey [23] to identify individuals whose treatment could *potentially* meet minimally adequate standards according to evidence-based guidelines.[26] Minimally adequate treatment consisted of: (1) psychopharmacological treatment defined as 4 of more visits to a physician with psychotropic medication for at least 30 days; or (2) psychotherapy defined as 8 or more visits to any health professional. Individuals in ongoing treatment at the time of the survey were considered to have met these criteria. This definition was intended to be broadly inclusive and similar criteria have been used widely in assessing quality of care and disparities.[8, 27–30]

Statistical Analysis

Analyses were conducted separately for Latino and Asian Americans, who were classified as having limited or good English proficiency. Demographic variables were compared among LEP and EP participants using Rao-Scott chi-square tests, which adjusts for the complex survey design.[31] The first stage of the analyses addressed access to care following onset of a lifetime mental disorder. The proportion of LEP and EP individuals who accessed care was compared via Rao-Scott chi-square tests. Because past research has demonstrated both lower rates of service use among ethnic minorities [8, 16] and lengthy delays among individuals who access services,[15, 16] we estimated the aggregate burden of untreated mental disorders by calculating the number of years that LEP and EP individuals have lived with untreated disorders. We defined years of untreated disorder as the duration between disorder onset and first service use for those who sought treatment and as the duration between disorder onset and most recent episode of active disorder for those who have not sought treatment, and compared LEP and EP individuals via survey designed based tests by STATA. Additionally, survival analysis was conducted to examine the duration of untreated disorder. The Kaplan-Meier survival curve was estimated in STATA to show cumulative lifetime probability of service use from time of disorder onset for LEP and EP individuals. Participants who did not access services were treated as right censored. We bottom coded those with delay time of less than one year as one year. Then we used Cox proportional hazards model to test whether the odds of services use were significantly different between LEP and EP individuals stratified by race (Latino or Asian). To estimate the effect of language proficiency on lifetime service use for mental disorders controlling for sociodemographic variables, logistic regression was utilized.

The second stage of the analyses examined quality of care and barriers among those with 12-month mental disorders and 12-month treatment. Rao-Scott chi-square tests compared LEP and EP individuals on receipt of minimally adequate care and barriers. All inferential procedures accounted for the complex survey design and were conducted using STATA statistical software version 10.1. Survey weights were used for all estimation procedures.

Results

Sociodemographic Characteristics

The sociodemographic characteristics of LEP and EP individuals with a lifetime mental disorder (Latino: n = 781, Asian American: n = 366) are displayed in Table 1. Overall, 39.3% of Latinos and 34.4% of Asians had limited English proficiency. Among Latinos and Asians, LEP participants were older, had less education, and were more likely to be immigrants and uninsured than EP participants. Compared to EP Latinos, LEP Latinos were less likely to be working and were more likely to have low income or be married.

Clinical Characteristics

LEP and EP participants did not differ in the likelihood of having more than one disorder (Table 1). LEP participants had less severe disorders, although this difference was significant only for Latinos.

Lifetime Treatment for Mental Disorders

Significantly fewer LEP than EP individuals accessed lifetime services (Table 2; Latino: LEP 42.8% vs. EP 54.2%, p<0.01 and Asian: LEP 32.9% vs. EP 53.9%, p<0.01). Whereas general medical services alone were accessed equally, LEP participants accessed less specialty care than their EP counterparts. These patterns were statistically significant among Latinos for specialty mental health services alone (LEP 9.3% vs. EP 16.3%, p<0.01) and among Asians for use of combined (general medical plus specialty) services (LEP 10.3% vs. EP 24.5%, p<0.05). In multivariate analyses controlling for other sociodemographic variables, EP remained a significant predictor of lifetime treatment (Table 3; Latino OR 1.7, p<0.01; Asian OR 2.3, p<0.05). Patterns were essentially unchanged in sensitivity analyses with models including nativity (which is strongly related to language proficiency) and an expanded model including all participants regardless of disorder status.

LEP individuals lived with untreated disorders for significantly longer than their EP counterparts (Table 2; Latino: LEP 14.6 years vs. EP 9.4 years, p<0.01; Asian: LEP 16.3 years vs. EP 9.0 years, p<0.001). The Kaplan-Meier survival curve that estimates the cumulative probability of lifetime treatment shows that LEP individuals are less likely to obtain care than EP individuals (Figure 1). Note the appearance of a discrepancy between the rates reported in Table 2 and the rates from the survival curve. This is because the survival curve estimates the cumulative lifetime probability of treatment contact as a function of time and takes into account censoring of individuals who have not had chances to access services whereas the rates in Table 2 describe the rate of treatment contact to date at a cross-section in time. Thus, the rates from these two methods cannot be directly compared. Analysis with Cox proportional hazards model found that LEP individuals had lower odds of receiving care than their EP counterparts, among both Latinos and Asians, and therefore had disorders that were left untreated for significantly longer amounts of time (p<0.001). Our findings were consistent in the sensitivity analyses that excluded those whose first service use occurred prior to arrival in the U.S., even after adjusting for age, gender, and disorder severity.

Barriers to Lifetime Treatment

LEP individuals were less likely than their EP counterparts to identify a need for treatment, a difference that was statistically significant among Asian Americans (Table 2; LEP 16.4% vs. EP 39.7%, p<0.01) but not Latinos (LEP 33.0% vs. EP 41.4%, p<0.10). Contrary to our hypothesis, LEP Latinos were significantly less likely than EP Latinos to report embarrassment about obtaining professional care (LEP 14.1% vs. EP 31.2%, p<0.001). Although more LEP than EP Asians were embarrassed and more LEP than EP participants

in both groups were uncomfortable speaking with a professional, these differences were not significant (Table 2).

Indicators of barriers were added to the logistic regression model predicting lifetime treatment. Perceived need for treatment and disorder severity significantly predicted lifetime treatment whereas embarrassment and discomfort were unrelated (data not shown). The inclusion of these variables partially attenuated the effects of language proficiency on lifetime treatment (Latino OR 1.5, 95% CI 1.0–2.3, p=0.06; Asian OR 1.8, 95% CI 0.9–3.8, p=0.10).

Quality of Care

Few individuals with a 12-month mental disorder received care potentially meeting minimally adequate standards. The proportion of individuals who received quality care did not differ significantly by language proficiency (Latino: LEP 18.2% vs. EP 21.3%, NS and Asian: LEP 9.8% vs. EP 18.6%, NS; data not shown in table).

Barriers to Current Treatment

Most individuals receiving past-year services did not access care within 4 weeks of perceiving a need, with a trend suggesting such delay was more common among LEP than EP Latinos (LEP 100.0% vs. EP 93.0%, p<0.10) but the opposite pattern among Asian Americans (LEP 65.9% vs. EP 94.8%, NS). Language proficiency was not significantly associated with any of the measures of barriers. LEP individuals tended to endorse more barriers to entering treatment than EP individuals (Latino: LEP 8.4 vs. EP 6.3, p=0.10; Asian: LEP 8.0 vs. EP 4.9, p<0.10), more LEP than EP participants endorsed a language barrier to entering treatment (Latino: LEP 43.5% vs. EP 13.5%, p=0.10; Asian: LEP 36.2% vs. EP 0.0% p=0.12), and fewer LEP than EP Latinos in treatment were able to communicate with their provider (Latino: LEP 80.2% vs. EP 91.1%, NS; Asian: LEP 95.8% vs. EP 93.4%, NS). Sensitivity analyses conducted with the entire sample of individuals in past-year treatment regardless of disorder status suggested that a low sample size limited the ability to detect differences. Nearly all of these comparisons were statistically significant (p<0.05) in the directions reported above with two exceptions: LEP and EP Asians did not differ in the number of barriers and somewhat fewer LEP than EP Asians in treatment could communicate with their provider (p=0.05).

Discussion

Following onset of a mental disorder, LEP Latino and Asian Americans are less likely to perceive a need for treatment or seek treatment, particularly specialty care, and experience longer duration of untreated disorder than their EP counterparts. Although LEP is associated with age, nativity, lack of insurance, and lower education, LEP remains associated with lower likelihood of lifetime treatment after adjustment for these and other variables, highlighting its importance as an independent contributor to disparities in care for mental disorders.

Interpretation of these findings is subject to several limitations. The community-based sample excludes institutionalized individuals who may be more likely to have severe disorders and to receive treatment. Likewise, some disorders including bipolar disorder and schizophrenia, which tend to be severe, were not assessed. Data on the onset of disorders and service use were based on self-report and collected retrospectively, potentially subject to limited recall and disclosure. Similarly, English language proficiency was based on self-report and not directly measured.

Examination of the impact of language proficiency on quality of care was limited by the small number of individuals with 12-month disorders accessing past-year treatment and the low overall rate of minimally adequate care. Fewer than 20% of Latino and Asian Americans with current mental disorders receive care that *potentially* meets minimally adequate standards, highlighting the overall lack of quality care for these individuals.

Several findings address potential explanations for the association between language proficiency and mental health treatment. Most Latino and Asian Americans with lifetime mental disorders did not identify a need for treatment. Consistent with prior research, [32, 33] perceived need for treatment was strongly related to service use. Lack of recognition was much more common among LEP than EP Asians with a less pronounced but similar pattern among Latinos. Low perceived need may arise from factors including tendency to somatize distress,[34] cultural differences in explanatory models of illness that raise the threshold for identifying distress as a disorder,[34] reliance on family or social networks for emotional problems rather than healthcare providers,[35, 36] or limited mental health literacy (which may restrict understanding of what constitutes a mental disorder or the role of treatment).[36] LEP individuals may reside in rural or poor areas with few mental health professionals,[37] and thus have less access to information about mental health through patient education or public health campaigns.[38] Whether and to what extent these factors contribute to low perceived need among ethnic minorities is important to determine, given that perceived need for care predicts eventual treatment.

Across all groups, more individuals accessed services (32.9% – 54.2%) than identified a need for such care (16.4% – 41.4%), suggesting that self-recognition of a mental health problem is only one pathway to care for Latino and Asian Americans. Social networks may play an important role in decisions to access care. Including problem recognition by family or peers with self-recognition, the combined rate of recognition (24.0% – 51.9%) approximated the rate of treatment, although there were still many individuals who accessed care without recognition by self or others. Individuals may have been brought to care as minors, received involuntary care, or sought care for other types of problems (e.g., somatic symptoms) and were referred by a professional to services. Further research of the process of help-seeking for mental disorders among LEP individuals would be warranted to investigate these possible explanations.

Results did not support the hypothesis that indicators of attitudinal barriers to treatment would be greater among LEP individuals. Contrary to expectations, the only significant association was among Latinos, for whom LEP is associated with less embarrassment about treatment. In multivariate analyses, embarrassment and discomfort were not significant predictors of lifetime treatment, suggesting that other factors such as low supply of mental health providers in their areas may be more critical in explaining the low rates of treatment among LEP individuals. Conversely, dimensions of stigma such as self-stigma and personal stigma were not measured in this study, although some evidence suggests the latter may be most relevant to perceived need and help-seeking for mental disorders.[39]

Analyses of barriers to treatment were limited by the small number of participants with 12-month disorders who accessed past-year treatment. Many more LEP than EP individuals delayed seeking treatment due to a language barrier even after recognizing a need, although this pattern was not statistically significant. In contrast, the majority of participants who received care were able to communicate with their providers in their own language. Because language concordance between participants and providers was not measured, we could not assess whether LEP participants were more likely to be treated by bilingual providers. Nationally, nearly 90% of LEP Latinos who have regular primary care use language services (interpreters or bilingual providers) to obtain care, suggesting that language services are of

vital importance in facilitating access to medical care.[5] It will be important to determine the extent of language barriers to treatment for mental disorders and examine how language services may impact help-seeking among LEP individuals.

Future studies of quality of care and language barriers within treatment utilizing clinical samples are warranted. Specifically, examination of the impact of patient-provider communication and language concordance in influencing the quality of care is an important direction for future research. Likewise, understanding whether mental health care quality differs between primary care and specialty settings for LEP patients would be valuable given that ethnic minorities are more likely to seek mental health care in primary care [7, 40] and evidence suggesting these settings provide lower quality of care for mental disorders.[29, 41]

Findings from this study indicate that limited English proficiency is an important factor in disparities in access to lifetime mental health care for Latino and Asian Americans with mental disorders. Moreover, results highlight that language proficiency is associated with perceived need for care, which in turn predicts lifetime treatment for mental disorders. Together, these findings raise the possibility that interventions that target access to care and mental health literacy among LEP communities may provide opportunities to reduce disparities in mental health care.

Acknowledgments

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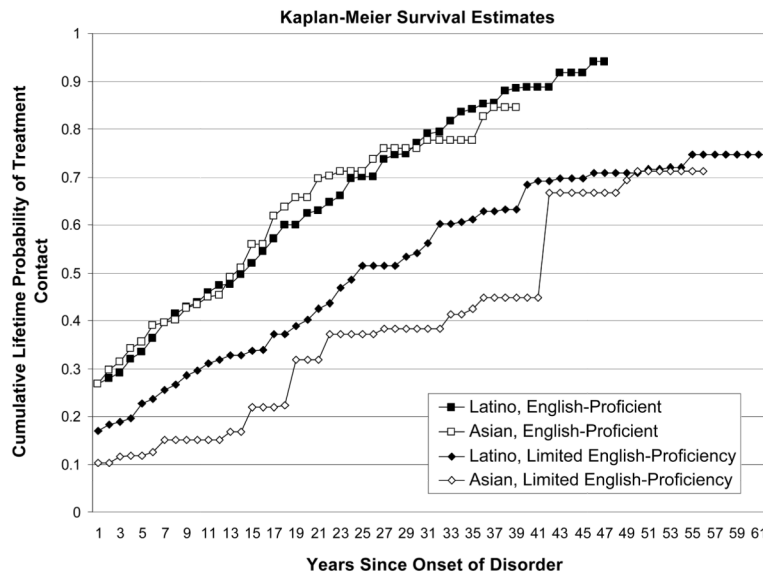
Figure 1.
Cumulative Lifetime Probability of Treatment Contact by English Language Proficiency among Latino and Asian Americans with Mental Disorders

Table 1

Demographic and Clinical Features of Latino and Asian Americans with Lifetime Mental Disorders

	Latino			Asian American		
	English Proficiency			**English Proficiency**		
	Poor/Fair N = 342 39.3%	**Good/Excellent N = 439 60.7%**	**P**	**Poor/Fair N = 123 34.4%**	**Good/Excellent N = 243 65.6%**	**P**
	%	**%**		**%**	**%**	
Age category			**<0.001**			**0.021**
18–34 years	34.0%	52.9%		32.9%	54.7%	
35–49 years	31.0%	34.3%		33.8%	28.9%	
50–64 years	20.7%	10.3%		19.4%	11.4%	
65 years or more	14.3%	2.6%		13.9%	5.0%	
Sex			0.403			0.122
Male	47.0%	51.7%		54.3%	43.4%	
Female	53.0%	48.3%		45.7%	56.6%	
Education			**<0.001**			**<0.001**
11 years or less	67.1%	24.6%		29.3%	4.4%	
12 years	19.0%	31.4%		17.6%	15.5%	
13–15 years	9.8%	29.6%		23.5%	31.3%	
16 years or more	4.1%	14.5%		29.6%	48.7%	
Marital Status			**<0.001**			0.159
Married/cohabitating	72.1%	51.8%		64.8%	51.2%	
Divorced/separated/widowed	19.7%	16.7%		11.0%	11.7%	
Never married	8.1%	31.5%		24.2%	37.1%	
Employment			**0.007**			0.850
Employed	53.6%	61.9%		60.8%	58.5%	
Unemployment	3.8%	10.3%		8.3%	10.7%	
Out of Labor Force	42.6%	27.8%		30.9%	30.8%	
Household Income			**<0.001**			0.090
$0–$14,999	32.5%	23.9%		25.7%	19.0%	
$15,000–$34,999	32.2%	21.2%		18.9%	9.5%	

	Latino English Proficiency			Asian American English Proficiency		
	Poor/Fair N = 342 39.3% %	Good/Excellent N = 439 60.7% %	P	Poor/Fair N = 123 34.4% %	Good/Excellent N = 243 65.6% %	P
$35,000–$74,999	27.1%	29.5%		28.0%	29.1%	
$75,000+	8.2%	25.4%		27.4%	42.3%	
Type of Insurance			**0.000**			**0.027**
No insurance	38.5%	25.7%		26.3%	13.5%	
Private through employer	29.7%	45.3%		36.9%	58.5%	
Private Self	1.3%	3.0%		13.2%	8.2%	
Medicare	14.3%	6.7%		14.5%	7.8%	
Medicaid	15.2%	15.6%		5.2%	7.9%	
Others	1.1%	3.7%		3.9%	4.0%	
Nativity			**<0.001**			**<0.001** .
US Born	15.0%	76.3%		5.1%	46.9%	
Immigrant	85.0%	23.7%		94.9%	53.1%	
Number of lifetime disorders			0.225.			0.456.
1	46.7%	40.2%		64.3%	57.9%	
2+	53.3%	59.8%		35.7%	42.1%	
Number of 12-month disorders			0.407			0.692
0	46.6%	44.7%		43.3%	47.6%	
1	27.5%	32.6%		37.5%	31.6%	
2+	25.9%	22.7%		19.2%	20.8%	
Disorder Severity			**0.003**			0.271
Mild	47.9%	36.0%		50.4%	40.4%	
Moderate	14.4%	22.1%		21.5%	28.1%	
Severe	37.7%	41.9%		28.1%	31.5%	

Table 2

Lifetime Treatment for Mental Disorders, Barriers to Lifetime Care, and English Language Proficiency for Latino and Asian Americans

	Latino						Asian American					
	Limited English Proficiency		English Proficient				Limited English Proficiency		English Proficient			
	N	%	N	%	P		N	%	N	%	P	
Any Health Care Treatment	342	42.8%	439	54.2%	**0.005**		123	32.9%	243	53.9%	**0.005**	
Generalist Care Only	342	16.8%	439	16.9%	0.984		123	12.4%	243	13.3%	0.845	
Specialist Care Only	342	9.3%	439	16.3%	**0.009**		123	9.9%	243	14.3%	0.231	
Both Generalist and Specialist Care	342	16.7%	439	20.2%	0.328		123	10.3%	243	24.5%	**0.029**	
Years of Untreated Disorder			434					16.	242	900		
Median		10		6				15		5		
Mean	334	14.6	434.0	9.4	**0.002**		120.00	16.3	242.0	9.0	**<0.001**	
Self-Identified Need for Treatment	342	33.0%	439	41.4%	0.059		123	16.4%	243	39.7%	**0.001**	
Embarrassed if friends knew you were getting professional help	341	14.1%	439	31.2%	**<0.001**		123	43.6%	242	36.7%	0.269	
Uncomfortable talking about problems with professional	342	30.5%	439	26.2%	0.250		116	21.0%	242	17.0%	0.514	

Table 3

Predictors of Lifetime Treatment among Latino and Asian Americans with Lifetime Mental Disorders

	Latino (n = 778)	Asian American (n = 365)
	Odds Ratio (95% CI)	Odds Ratio (95% CI)
Age		
18–34 years (reference)	1.0	1.0
35–49 years	**1.8 (1.1 – 2.9)**[*]	1.6 (0.9 – 2.9)
50–64 years	1.7 (0.9 – 3.1)[+]	0.9 (0.3 – 2.3)
65 years or more	0.6 (0.2 – 1.7)	1.8 (0.4 – 7.6)
Sex		
Male (reference)	1.0	1.0
Female	**1.9 (1.3 – 2.8)**[**]	1.2 (0.6 – 2.1)
Education		
11 years or less	1.0	1.0
12 years	1.2 (0.7 – 2.1)	1.2 (0.4 – 4.3)
13–15 years	**1.9 (1.1 – 3.3)**[*]	2.3 (0.9 – 6.1)[+]
16 years or more	1.5 (0.9 – 2.6)	1.9 (0.6 – 6.6)
Employment		
Employed (reference)	1.0	1.0
Unemployment	1.1 (0.5 – 2.7)	**3.1 (1.1 – 8.4)**[*]
Out of Labor Force	1.6 (0.8 – 3.0)	1.0 (0.6 – 1.9)
Type of Insurance		
Uninsured (reference)	1.0	1.0
Private through employer	1.5 (0.8 – 3.0)	0.9 (0.4 – 2.1)
Private Self	1.1 (0.4 – 2.9)	**0.3 (0.1 – 0.9)**[*]
Medicare	**3.0 (1.5 – 6.0)**[**]	1.2 (0.3 – 4.6)
Medicaid	**1.9 (1.0 – 3.7)**[*]	1.2 (0.3 – 4.6)
Others	2.7 (0.6 – 11.6)	0.6 (0.1 – 3.9)
Marital Status		
Married/cohabiting (reference)	1.0	1.0
Divorced/separated/widowed	1.7 (0.9 – 3.4)	1.7 (0.7 – 3.7)
Never married	0.7 (0.4 – 1.1)	1.4 (0.5 – 3.5)
Household Income		
$0–$14,999 (reference)	1.0	1.0
$15,000–$34,999	0.7 (0.5 – 1.1)	0.6 (0.3 – 1.4)
$35,000–$74,999	0.7 (0.4 – 1.3)	0.6 (0.2 – 1.5)
$75,000[+]	0.7 (0.3 – 1.3)	0.8 (0.3 – 2.1)
Language Proficiency		
Limited English proficiency (reference)	1.0	1.0
Good English proficiency	**1.7 (1.2 – 2.4)**[**]	**2.3 (1.2 – 4.5)**[*]

[+]p < 0.10;

*
p < 0.05;

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p < 0.01