See Pretest and Objectives on page 1095.

The Prevalence and Comorbidity of Social Anxiety Disorder Among United States Latinos: A Retrospective Analysis of Data From 2 National Surveys

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Objective: Social anxiety disorder (SAD) is increasingly being recognized as a prevalent, unremitting, and highly comorbid disorder, yet studies focusing on this disorder among US Latinos and immigrant populations are not available. This article evaluates ethnic differences in the prevalence and comorbidity of SAD as well as the clinical and demographic characteristics associated with SAD. Cultural and contextual factors associated with risk of SAD are also examined within the Latino population more specifically.

Method: Data are analyzed from the National Latino and Asian American Study and the National Comorbidity Survey-Replication. Both studies utilized the World Health Organization–Composite International Diagnostic Interview, which estimates the prevalence of lifetime and 12-month psychiatric disorders according to *DSM-IV* criteria.

Results: Latinos reported a lower lifetime and 12-month SAD prevalence and a later age at onset than US-born non-Latino whites. On the other hand, Latinos diagnosed with 12-month SAD reported higher impairment across home, work, and relationship domains than their non-Latino white counterparts. Relative to non-Latino whites, Latinos who entered the United States after the age of 21 years were less likely to have lifetime SAD comorbidity with drug abuse and dependence and more likely to report lifetime SAD comorbidity with agoraphobia.

Conclusions: The pattern of risk and associated characteristics of SAD varies for Latinos as compared to non-Latino whites. This is reflected by differences between these 2 groups across SAD prevalence, onset, impairment, and comorbidity. The particularly high comorbidity found with agoraphobia among Latinos who arrive in the United States as adults suggests that cultural factors and timing of immigration play a role in the manifestation and course of anxiety disorders. Interventions designed to decrease the levels of impairment associated with SAD are needed as well as efforts to target Latinos suffering from this disorder, specifically.

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Social anxiety disorder (SAD) is characterized by a marked and persistent fear of social or performance situations and an avoidance or fear of humiliation and embarrassment associated with these situations.[1] Social anxiety disorder is disabling and costly, often associated with lower educational attainment, reduced work productivity, and other social indicators of reduced quality of life.[2] Social anxiety disorder is present at some point in the lives of as many as 13% of the adult population in several Western countries.[3] The lifetime prevalence of SAD among the English-speaking population of the United States was recently estimated at 12.1%.[4] Social anxiety disorder is the third most common lifetime disorder among US adults, behind alcohol dependence and major depressive disorder.[5] Women, those of lower socioeconomic status, and those who are young and unmarried are generally considered to be at higher risk for the diagnosis.[3]

Cross-cultural research has documented significant variability in the prevalence of SAD. Lifetime prevalence of this disorder in Korea and Taiwan has been reported to be as low as 1% or less.[6,7] In Latin America, the lifetime prevalence of SAD has been estimated at 2.4% in Mexico City, Mexico;[8] 3.5% in Sao Paulo, Brazil;[9] and 1.6% in Puerto Rico[10] using *DSM-IV*, *ICD-10*, and *DSM-III* criteria, respectively. Most recently, a lifetime prevalence of 4.7% was found among a Mexican national sample using *ICD-10* criteria.[11] Thus, the prevalence of SAD in the United States appears to be higher than in Latin American and Asian countries.

Within the United States, ethnicity and nativity group comparisons in prevalence have yielded mixed results. Karno and colleagues[12] used the Los Angeles site data from the Epidemiologic Catchment Area (ECA) study and reported no significant differences across US-born non-Latino whites, US-born Mexican Americans, and Mexico-born Mexican Americans. In the Mexican American Prevalence and Service Study (MAPSS), conducted in Fresno, California, a lifetime prevalence of 7.4% was reported,[13] and US-born Mexican Americans reported a prevalence that was more than twice as high (10.9%) as their counterparts born in Mexico (5.3%). Results from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) corroborate this pattern of results. Mexican Americans born in Mexico had a lower lifetime SAD prevalence (2.1%) than Mexican Americans (4.1%) and non-Latino whites (5.5%) born in the United States. [14] In general, when differences emerge, foreign-born Latinos are at lower risk for SAD.

For Clinical Use

- Although Latinos with social anxiety disorder (SAD) may have a later onset of the disorder than non-Latino whites, they may present with more impairment associated with the disorder across domains of functioning that include work, home, and social relationships.
- To better evaluate comorbidity among Latinos with SAD, consider a thorough assessment of other anxiety disorders, since those who arrive in the United States as adults may present with unique profiles that include a high risk of agoraphobia.
- Being fluent in English does not reduce the likelihood of having SAD among Latinos. In fact, those who grew up speaking both English and Spanish were at higher risk than those who grew up speaking primarily Spanish. Screening for SAD should be considered regardless of nativity.

More research is needed to disentangle the prevalence among US Latinos, however. All 3 studies cited earlier focused on Mexican American samples. Comparable reports for other US Latino groups are needed, since these groups combined represent one-third of the Latino population living in the United States.[15] The lifetime prevalence of SAD among US Latinos surveyed in the National Comorbidity Survey (NCS) was 19.0%.[13] However, the NCS was conducted entirely in English and excluded a significant number of monolingual Spanish-speaking, foreign-born Latino participants. In the NESARC study, a different diagnostic instrument available in both Spanish and English found that the lifetime prevalence of SAD was 1.6% for Cubans and 5.1% for Puerto Ricans.[16] This indicates that more attention is needed to further clarify which subgroups of Latinos are at higher risk for this disorder.

Beyond prevalence, research on the onset, features, and course of SAD has not focused on ethnic minority and immigrant groups in the United States, including Latinos. For example, little is known about whether or not demographic and clinical characteristics associated with SAD vary across ethnicity and nativity, including the age at which social anxiety symptoms are first experienced. Additionally, data are not available on ethnicity and nativity differences in the levels of impairment and co-occurring psychiatric morbidity present among those with SAD.

Social anxiety disorder has been shown to be strongly associated with other psychiatric disorders. In the NCS, 81% of those with SAD reported at least 1 additional lifetime disorder, and about one-half (48%) reported as many as 3 additional lifetime disorders.[17] Comorbidity was present with other anxiety disorders (56.9%), affective disorders (41.4%), and substance-related disorders (39.5%). High comorbidity has similarly been documented among samples with relatively lower base rates of SAD prevalence[18] and among children and adolescents.[19,20] To date, however, few or no data are available about comorbidity patterns among ethnic minority groups in the United States, including Latinos.

Research indicates that, in addition to being highly comorbid, SAD has an age at onset reported in early to mid adolescence. The emergence of symptoms of SAD in epidemiologic studies is reported to be between 10 and 16.6 years of age.[2] New cases of this disorder are thought to be rare after the second decade of life.[21] Because of this early onset, SAD often precedes the emergence of other psychiatric disorders.[19,22] Even disorders that require a childhood onset for diagnosis, such as conduct disorder, have been reported as having a later onset than SAD.[23] However, because no information is available about the onset of SAD among representative samples of US Latinos, it is difficult to ascertain the temporal sequence of SAD in relation to other disorders. The closest indicator regarding age at onset of SAD among a Latin American sample comes from a national study conducted in Mexico,[11] which found a median age at onset of 13 years.

Although there is increased interest in the role of cultural factors in the etiology and course of SAD,[1,24] much less is known about whether or not immigrant groups have higher or lower risk of the development of SAD. Latinos who arrive as children are at higher risk of developing psychiatric disorders or of developing them at an earlier age than their counterparts who arrive in the United States later in life.[25–27] This would suggest that SAD and its associated impairment might be lower for immigrant groups. Other potential risk factors among Latino immigrants may include their comparatively lower educational levels and English fluency,[28,29] given that public speaking is among the most commonly feared social and performance situations,[19,30] endorsed by as many as 77% of those with SAD.[30]

The specific aims of this study are the following:

(1) To compare the lifetime and 12-month prevalence of SAD across nationally representative samples of Latinos and non-Latino whites living in the United States and to evaluate ethnic differences in key diagnostic criteria and associated characteristics of SAD. These include the age at onset of social anxiety and levels of functional impairment that are attributed to the disorder.

(2) To examine patterns of risk of SAD across sociodemographic factors for both Latinos and non-Latino whites. Sex, age, income, education, and employment are among those evaluated. Among Latinos, additional cultural and contextual factors such as language proficiency, nativity, and age of immigration are also examined.

(3) To determine the lifetime comorbidity of SAD with selected disorders, including depressive disorders, other anxiety disorders, and substance use disorders, and examine differences in the reports of comorbidity across ethnicity and nativity groups.

METHOD

Participants

As described elsewhere,[31] the Latino arm of the National Latino and Asian American Study (NLAAS) is a nationally representative survey of English- and Spanish-speaking household residents aged 18 years and older in the noninstitutionalized population of the coterminous United States. Approximately half of the Latino sample in the NLAAS was surveyed in Spanish, and a 75.5% response rate was obtained. The Institute for Social Research at the University of Michigan was responsible for data collection. A multistage clustered area probability sample of households was employed, and Latinos were stratified across 4 subgroups (Puerto Rican, Cuban, Mexican, and Other Latinos). The NLAAS weighted sample is similar to the 2000 US Census in sex, age, education, marital status, and geographical distribution but different in immigration status and household income of the respondent, with more immigrants to the United States and lower income respondents in the NLAAS sample. This discrepancy may be due to undercounting of immigrants[32] and noninclusion of those who are undocumented[33] in the US Census.

The National Comorbidity Survey-Replication (NCS-R) Part II is a nationally representative survey of English-speaking household residents (n = 9,282) aged 18 years and older living in the conterminous United States.[34] Face-to-face interviews were conducted by professional interviewers from the Institute for Social Research at the University of Michigan, Ann Arbor. The overall response rate for the survey was 70.9%. Monolingual Spanish-speaking Latinos and other non–English-speaking immigrant groups were excluded. Therefore, only the non-Latino US-born whites surveyed in the NCS-R were selected for the present study (n = 4,047).

The NLAAS and NCS-R are collectively part of the National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys Initiative and were designed to allow for cross-linking of data in order to facilitate ethnic group comparisons.[35]

Procedure

The NLAAS survey data were collected by 275 trained multilingual interviewers, while the NCS-R surveys were conducted by 342 certified English interviewers. Recruitment began with an introductory letter and study brochure mailed to the sample households. Interviewers obtained written informed consent in the respondent's preferred language. The Institutional Review Board Committees of Cambridge Health Alliance, the University of Washington, and the University of Michigan approved all recruitment, consent, and interviewing procedures. Similarly, respondents to the NCS-R received a brochure in the mail followed by an informational household visit. Consent procedures for the NCS-R were approved by the Human Subjects Committees of Harvard Medical School and the University of Michigan.

Measures

Diagnostic instrument. Lifetime prevalence and past-year prevalence of psychiatric disorders were obtained using the diagnostic interview of the World Health Organization Composite International Diagnostic Interview (WHO-CIDI), a fully structured diagnostic instrument administered by trained lay interviewers that is based on *DSM-IV* and *ICD-10* symptom criteria. For this study, data regarding the diagnostic history of the NCS-R and NLAAS respondents were obtained for 13 psychiatric disorders. These included SAD and 4 other anxiety disorders (generalized anxiety disorder, agoraphobia, panic disorder, and posttraumatic stress disorder); 2 depressive disorders (major depression and dysthymic disorder); 4 substance use disorders (alcohol abuse, alcohol dependence, drug abuse, and drug dependence); and 2 additional disorders (bulimia nervosa and conduct disorder). Conduct disorder was evaluated retrospectively and only among individuals who were 45 years of age or younger. Anorexia nervosa was not included due to its low prevalence among NLAAS respondents.[36]

SAD screening. The WHO-CIDI screening procedure for SAD involved 2 primary questions regarding the presence of social fears related to several social/performance situations (items 1 and 2 in Table 1). Individuals endorsing either of these initial 2 items were asked additional screener questions (items 3–5 in Table 1). These included whether or not they believe their social fears are unreasonable or excessive (*DSM-IV* Criterion C) or whether or not they avoid these situations or endure them with significant distress (*DSM-IV* Criterion D). Only those endorsing the screener items were administered the full SAD diagnostic module, which includes assessment of fears of 14 social/performance situations such as meeting new people; going to parties or social gatherings; writing, eating, or drinking in public; and others.

Age at onset. Retrospective age-at-onset reports were obtained using the methodology described by Breslau et al.[37] Participants were asked, "Can you remember your *exact age* the *very first time* you had the syndrome?" Respondents who did not recall an exact age were probed for a bound of uncertainty by moving up the age range incrementally (eg, "Was it before you first started school?" "Was it before you became a teenager?"). Age at onset was set at the upper end of the bound (ie, age 5 years for those reporting an onset before school started and age 12 years for those whose onset was before they became teenagers).

Current distress and past-year functional impairment. As part of the SAD module, respondents rated their present level of fear if they had to endure their endorsed social and performance situations using a 5-point scale from 1 (*not at all*) to 5 (*very severe*). Those reporting at least moderate (3 or above) distress were additionally administered the Sheehan Disability Scale,[38] rating their past year interference from 0 (*none*) to 10 (*very severe*) across 4 domains: home management, work, close relationships, and social life. A mean interference score was computed combining the responses from these 4 domains.

Table 1. Ethnic Differences Across Social Anxiety Disorder (SAD) Screening, Prevalence, Onset, and Impairment[a]

	Latinos				US-Born Non-Latino Whites				Test of Differences	
	n	%	Mean	SE	n	%	Mean	SE	*F*	*P* Value
SAD screening										
1. Afraid or shy of meeting new people, going to parties, going on a date, or using a public bathroom	2,554	25.2	…	1.05	4,044	35.8	…	1.31	39.49	<.001
2. Afraid or uncomfortable in front of a group, like public speaking[b]	1,909	24.6	…	1.48	2,290	38.5	…	1.84	34.98	<.001
3. Exposure to social situation invariably causes anxiety[c]	1,095	64.5	…	2.14	2,764	63.1	…	1.45	0.29	.594
4. Recognition of fear as excessive or unreasonable[c]	1,095	44.1	…	2.05	2,745	47.6	…	1.17	2.22	.139
5. Social or performance situations are avoided[c]	1,095	46.3	…	1.83	2,765	42.2	…	1.30	3.46	.066
SAD prevalence			…							
Lifetime SAD	197	7.7	…	0.79	806	13.3	…	0.56	34.11	<.001
Past-year SAD	146	4.5	…	0.57	470	7.8	…	0.40	21.23	<.001
SAD age at onset, y										
Lifetime SAD	196	…	13.1	0.83	806	…	11.3	0.22	4.42	.038
Past-year SAD	145	…	14.4	1.28	470	…	11.5	0.32	4.89	.030
Social fears endorsed, mean, no.		…				…				
Lifetime SAD	197	…	8.9	0.28	806	…	8.3	0.12	4.07	.047
Past-year SAD	146	…	9.3	0.43	470	…	8.5	0.19	2.76	.100
Current fear if faced by social situation (range, 1–5)		…				…				
Lifetime SAD	196	…	2.8	0.10	804	…	2.7	0.03	1.46	.230
Past-year SAD	146	…	3.2	0.09	469	…	3.2	0.05	0.99	.323
Past-year impairment (range, 0–10)[d]		…				…				
Home management	118	…	4.4	0.34	376	…	2.1	0.17	37.81	<.001
Work	113	…	4.4	0.48	365	…	3.2	0.17	5.44	.022
Relationships	118	…	5.0	0.35	376	…	4.1	0.18	5.94	.017
Social life	117	…	5.5	0.32	372	…	4.9	0.16	2.26	.137
Overall impairment (mean of 4 items above)	112	…	4.9	0.33	362	…	3.6	0.13	13.51	<.001

[a]All rates are sex/age adjusted. [b]Asked only if the response to 1 was *No*. [c]Asked only if the response to 1 or 2 was *Yes*. [d]Past-year impairment among individuals with past-year SAD and reporting moderate or stronger fear if faced by social situations.
Symbol: … = not applicable.

Sociodemographic characteristics. Individual and family demographic characteristics were collected. *Sex* was coded using dummy variables (1 = male; 0 = female). *Age* (18–34 years; 35–49 years; 50–64 years; and 65 years or older), *past-year household income* ($0–$14,999; $15,000–$34,999; $35,000–$74,999; and $75,000 or more), and *years of education* (11 years or less; 12 years; 13–16 years; and 17 years or more) were each coded into 4 categories. *Employment* (employed, unemployed, and out of the labor force) and *marital status* (married/living in marriage-like relationship, not married, or widowed/divorced/separated) were each coded into 3 categories.

Ethnicity, nativity, and age of entry. NLAAS Latino respondents (Latinos; n = 2,554) were divided into a US-born Latino group (n = 924) and 2 foreign-born groups. Immigrants who arrived before the age of 21 years formed the *early-arrival Latino* group (n = 838) while those who arrived at age 21 years or older formed the *late-arrival Latino* group (n = 784). Age 21 years was selected to separate the age of entry groups for 2 reasons. First, because onset of SAD is relatively infrequent after the second decade of life, and thus the late-arrival group was considered to represent a group that immigrated after this period of vulnerability.[21] Second, 21.5 years was the mean age of arrival in the United States reported among the NLAAS immigrants. For the NCS-R sample, all non-Latino white respondents (n = 4,047) were US-born and were grouped together.

Language. Language proficiency was evaluated by asking the NLAAS respondents to rate their ability to speak, read, and write in Spanish and English using a scale from the Cultural Identity Scales for Latino Adolescents.[39] Lower scores indicate lower proficiency, while higher scores indicate a higher proficiency (α = .90 in English and α = 0.96 in Spanish). An additional language item asked individuals to report on their primary language spoken (Spanish, English, or both languages) while growing up.[40]

RESULTS

SAD Screening, Prevalence, Onset, and Impairment

The lifetime prevalence of SAD was 7.7% among Latinos, which was significantly lower than the 13.3% prevalence found for non-Latino whites ($P < .001$; Table 1). The 12-month prevalence of SAD among Latinos was also significantly lower (4.5%) than among non-Latino whites (7.8%; $P < .001$). These differences in prevalence were in part due to Latino respondents' being significantly less likely to endorse either of the 2 social situation screener items (A or B; all *P* values < .001). As a result, the full SAD diagnostic module was administered to fewer Latino respondents (16.3%) than non-Latino white respondents (25.3%). Latinos were more likely than non-Latino whites to endorse that they avoided social or performance situations (screener E). However, this difference was only marginally significant ($P < .066$).

Non-Latino whites reported earlier ages of onset than Latinos. This was the case for individuals who met criteria for lifetime (11.3 vs 13.1 years) and past-year (11.5 vs 14.4 years) SAD. On the other hand, the mean number of fears endorsed by Latino respondents with lifetime SAD was higher (8.9), relative to non-Latino whites (8.3). Among

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Table 2. Sociodemographic Correlates of Social Anxiety Disorder[a]

	Latinos			US-Born Non-Latino Whites		
	Sample n	12-Month Odds Ratio (95% CI)	Lifetime Odds Ratio (95% CI)	Sample n	12-Month Odds Ratio (95% CI)	Lifetime Odds Ratio (95% CI)
Sex						
Male	1,127	1.00	1.00	1,752	1.00	1.00
Female	1,427	1.03 (0.730–1.464)	1.13 (0.779–1.627)	2,295	1.26 (0.996–1.607)	1.20 (0.994–1.438)
Age, y						
18–34	1,068	1.00	1.00	1,255	1.00	1.00
35–49	801	0.85 (0.533–1.364)	1.36 (0.893–2.059)	1,294	1.08 (0.829–1.410)	1.17 (0.919–1.485)
50–64	454	1.43 (0.885–2.323)	1.74 (1.135–2.667)*	913	0.61 (0.454–0.818)**	0.80 (0.597–1.064)
65 or older	231	0.10 (0.034–0.296)***	0.62 (0.153–2.530)	585	0.24 (0.154–0.375)***	0.39 (0.282–0.541)***
Income, $						
0–14,999	711	1.00	1.00	500	1.00	1.00
15,000–34,999	691	0.87 (0.478–1.572)	1.05 (0.634–1.745)	821	0.62 (0.415–0.920)*	0.72 (0.506–1.035)
35,000–74,999	695	0.87 (0.460–1.646)	1.27 (0.719–2.257)	1,472	0.54 (0.364–0.800)**	0.73 (0.518–1.018)
75,000 or more	457	0.75 (0.404–1.387)	1.20 (0.711–2.038)	1,254	0.39 (0.260–0.596)***	0.60 (0.411–0.879)**
Education, y						
11 or fewer	993	1.00	1.00	499	1.00	1.00
12	633	1.22 (0.745–2.004)	1.24 (0.900–1.706)	1,202	0.58 (0.446–0.747)***	0.64 (0.478–0.858)**
13–15	567	0.70 (0.426–1.139)	1.01 (0.644–1.585)	1,234	0.57 (0.403–0.801)**	0.71 (0.515–0.965)*
16 or more	361	0.99 (0.379–2.560)	1.11 (0.565–2.177)	1,112	0.44 (0.320–0.595)***	0.63 (0.492–0.811)***
Employment						
Employed	1,566	1.00	1.00	2,709	1.00	1.00
Unemployed	182	1.39 (0.669–2.892)	1.16 (0.604–2.242)	208	1.46 (0.967–2.218)	1.17 (0.837–1.640)
Out of labor force	806	2.75 (1.931–3.919)***	1.74 (1.172–2.590)**	1,123	1.77 (1.427–2.199)***	1.34 (1.121–1.600)**
Marital status						
Married	1,288	1.00	1.00	2,151	1.00	1.00
Never married	669	1.52 (0.870–2.647)	1.08 (0.684–1.701)	884	1.49 (1.105–2.019)*	1.48 (1.236–1.770)***
Widowed, divorced, or separated	596	1.70 (1.096–2.636)*	1.30 (0.871–1.948)	1,009	1.93 (1.493–2.488)***	1.46 (1.149–1.862)**
Latino subgroup						
Puerto Rican	495	1.00	1.00			
Cuban	577	0.76 (0.438–1.332)	0.62 (0.362–1.075)			
Mexican	868	0.45 (0.245–0.825)*	0.72 (0.448–1.149)			
Other Latino	614	0.47 (0.219–0.998)*	0.64 (0.342–1.188)			
Nativity						
US-born	924	1.00	1.00			
Immigrant/non–US-born	1,630	0.76 (0.492–1.186)	0.62 (0.451–0.857)**			
US Entry (if not US-born)						
< 21 years (early-arrival Latinos)	784	1.00	1.00			
≥ 21 years (late-arrival Latinos)	838	0.75 (0.372–1.502)	0.67 (0.413–1.076)			
English proficiency						
Poor/fair	1,254	1.00	1.00			
Good/excellent	1,291	1.55 (0.963–2.507)	1.75 (1.096–2.790)*			
Spanish proficiency						
Poor/fair	589	1.00	1.00			
Good/excellent	1,754	0.80 (0.480–1.327)	0.65 (0.425–0.985)*			
Language spoken while growing up						
Spanish only	1,675	1.00	1.00			
Both languages	641	1.57 (1.026–2.387)*	1.79 (1.199–2.668)**			
English only	213	1.29 (0.487–3.429)	1.79 (0.941–3.399)			

[a] Each variable was evaluated in separate multiple regression equations controlling for sex and age.
*$P < .05$.
**$P < .01$.
***$P < .001$.

those with past-year SAD, Latinos reported significantly higher impairment than non-Latino whites across 3 of the 4 domains evaluated. This included more difficulties with their ability to manage their homes and work and in their close relationships with other people (see Table 1). Subsequent analyses revealed that the presence of a comorbid mood, anxiety, or substance abuse disorder was associated with higher SAD-related impairment. Higher impairment was also found among those with lower socioeconomic status. However, none of the clinical and sociodemographic factors accounted for the differential impairment reported by Latinos, relative to non-Latino whites (data not shown).

Sociodemographic Correlates of SAD

Table 2 includes the findings regarding the sociodemographic correlates of SAD, presented separately for Latinos and non-Latino whites. Across both ethnic groups, females and males did not differ in their SAD risk. Among non-Latino whites, lower risk of SAD was present among those aged 50 years and older, relative to those aged between 18–34 years, and lower risk was found among individuals with higher incomes and higher educational attainment. Also among non-Latino whites, higher risk of SAD diagnosis was found among those who were not married or employed. For Latinos, many of the demographic risk factors found for

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Table 3. Lifetime Comorbidity Among Individuals With Social Anxiety Disorder Across Ethnicity and Nativity Categories[a,b]

	US-Born Latinos	Immigrant Latino <21 Years at Entry	Immigrant Latino ≥21 Years at Entry	US-Born Non-Latino Whites	*F*	*P* Value
Comorbid depressive disorders						
Major depression	48.7	46.7	37.9	49.0	0.65	.582
Dysthymia	12.8	16.4	17.4	14.3	0.19	.903
Comorbid anxiety disorders						
Generalized anxiety disorder	19.1	16.1	17.2	24.7	0.80	.498
Agoraphobia	15.7	14.6	48.6	11.9	4.43	.006
Panic disorder	16.0	8.0	7.8	14.4	2.66	.053
Posttraumatic stress disorder	12.6	18.4	22.8	18.6	0.68	.568
Comorbid substance use disorders						
Alcohol abuse	30.4	29.1	16.4	26.2	0.47	.701
Alcohol dependence	13.0	21.5	7.0	14.6	0.84	.474
Drug abuse	16.9	26.5	1.6	19.4	22.12	<.001
Drug dependence	11.3	8.5	0.5	10.5	16.93	<.001
Other comorbid disorders						
Conduct disorder[c]	25.1	9.0	1.6	17.5	15.41	<.001
Bulimia	7.1	2.7	3.1	1.5	1.42	.242
Any lifetime comorbidity	80.7	64.1	71.5	70.3	0.62	.604

[a]Data are presented as percentages except where otherwise noted. [b]Percentages are sex/age adjusted. [c]Assessed only among respondents aged 45 years and younger.

the non-Latino whites group were not evident. For example, relative to those aged 18–34 years, individuals aged 50–64 years were at higher risk of SAD (lifetime) among Latinos, and higher income and higher education were not associated with a significantly lower SAD diagnosis among Latinos.

Several sociocultural correlates of SAD were additionally evaluated within Latinos (Table 2). Mexican and other Latinos (but not Cubans) had a lower 12-month SAD risk than Puerto Ricans, and immigrant Latinos had lower rates of lifetime SAD than US-born Latinos. Higher English proficiency was a risk factor for lifetime SAD, while higher Spanish proficiency was associated with a lower lifetime risk for this disorder. Latinos who grew up speaking both Spanish and English had a higher risk of SAD than those who grew up speaking Spanish only.

Lifetime Comorbidity

Lifetime comorbidity patterns are presented in Table 3 across 4 ethnicity/nativity groups, including non-Latino whites, US-born Latinos, early-arrival immigrant Latinos and late-arrival immigrant Latinos. Overall, the lifetime comorbidity of social anxiety across these 4 ethnicity/nativity groups ranged from 64.1% (early-arrival Latinos) to 80.7% (US-born Latinos). Examination of SAD comorbidity across these 4 groups revealed significant differences for 4 of the 12 disorders evaluated (SAD + agoraphobia [$P = .006$], SAD + drug abuse [$P < .001$], SAD + drug dependence [$P < .001$], and SAD + conduct disorder [$P < .001$]). To further evaluate the nature of these differences in lifetime comorbidity with SAD, a series of logistic regression models (controlling for age and sex) was computed to determine the odds ratios associated with each of the 4 comorbid diagnoses found to be significantly different across the ethnicity/nativity groups, using non-Latino whites as the reference group. In every case, the late-arrival Latinos group was found to have significantly different risk compared to the non-Latino whites group. Relative to non-Latino whites with SAD, late-arrival Latinos with SAD were less likely to be additionally diagnosed with drug abuse (OR = 0.06; 95% CI, 0.01–0.30, $P < .001$), drug dependence (OR = 0.05; 95% CI, 0.01–0.41, $P < .01$), and conduct disorder (OR = 0.11; 95% CI, 0.01–0.99, $P < .05$). In contrast, late-arrival Latinos with SAD were almost 7 times more likely to also be diagnosed with agoraphobia than non-Latino whites (OR = 6.90; 95% CI, 3.03–15.76, $P < 001$). As Table 3 indicates, almost half of late-arrival Latinos with SAD also reported a lifetime diagnosis of agoraphobia. In contrast, no other group reported a lifetime SAD and agoraphobia comorbidity higher than 16%. Post hoc tests did not reveal any other ethnicity/nativity group differences for comorbidity across any of these 4 disorders.

Additional analyses (data not shown) were conducted to identify which factors might mediate the differential risk associated with the lifetime agoraphobia and SAD comorbidity diagnosis across the ethnicity/nativity groups. Although age, income, education, employment, lifetime major depressive episode, and lifetime posttraumatic stress disorder diagnosis were significantly associated with a lifetime comorbid SAD and agoraphobia diagnosis, these factors did not account for the differences in SAD and agoraphobia comorbidity between ethnicity and nativity groups. Descriptive analyses of the late-arrival Latinos group that reported a past-year SAD and agoraphobia diagnosis revealed that the vast majority were female (84%), were between 50 and 64 years old (53%), were unemployed (63%), reported fair to poor levels of English fluency (89%), and had fewer than 12 years of education (74%).

DISCUSSION

A primary aim of this study was to report on the prevalence and comorbidity of SAD among a nationally representative

sample of Latinos. We evaluated ethnic differences in SAD by contrasting Latinos surveyed in the NLAAS with US-born non-Latino white participants from the NCS-R. Lower lifetime and 12-month prevalence of SAD was evidenced among Latinos, which is consistent with previous reports that have compared these 2 ethnic groups.[13,14] Additionally, non-Latino whites, relative to Latinos, reported an earlier age at onset of the disorder, which has been established as a marker for a worse prognosis.[41,42] A more complex picture emerged once SAD comorbidity and associated levels of interference were considered. Non-Latino whites with SAD were more likely to additionally be diagnosed with a lifetime externalizing disorder, including a drug use disorder and conduct disorder. However, this difference occurs only in contrast to immigrant Latinos who arrived in the United States at or after the age of 21 years. On the other hand, a strong association between SAD and agoraphobia was identified among Latinos who arrived in the United States at or after the age of 21 years. Approximately half of these individuals diagnosed with SAD were also diagnosed with agoraphobia, a figure that was several times higher than for non-Latino whites. Previous comorbidity reports among Latinos have focused on those who are dual-diagnosed with substance use disorders, and they have found that, relative to non-Latino whites and Latinos who are US-born, immigrant Latinos have lower substance use and a lower comorbidity risk.[43,44] This study highlights that, when the focus is on those with SAD, Latinos (including immigrants) are as vulnerable to comorbidity as their non-Latino white counterparts. However, the specific form that the comorbidity takes is different. The differences found in comorbidity patterns may result from immigrant Latinos' being less able to endure these situations or being less willing to resort to substance use when confronting these situations. This avoidance may place them at risk for other associated anxiety disorders (including agoraphobia) as an alternative but still maladaptive coping strategy. Support for this hypothesis was found in this study, since Latinos were more likely to avoid feared social or performance situations, although the difference was only marginally significant.

Our findings also indicate that Latinos are more severely impacted by SAD compared to non-Latino whites. Relative to non-Latino whites, Latinos with a past-year diagnosis of SAD reported a higher number of feared social situations and greater difficulties at home, at work, and interpersonally as a result of their symptoms. Clinical and demographic factors were not able to account for these differences. However, other factors that were not considered in this study may be responsible for these ethnic differences. For example, Latinos may be less likely to recognize that social anxiety symptoms warrant professional attention,[45] particularly if they believe them to be a consequence of acculturative stressors, language difficulties, or other cultural conflicts. Or it may be that non-Latino whites with SAD have greater access to services to address their mental health concerns, since Latinos are less likely to be covered by health insurance.[46]

Together, the data on impairment and comorbidity uncovered a significant subgroup of immigrant Latinos who arrive in the United States as adults and present with lifetime SAD and agoraphobia diagnoses. Immigrants who arrive as adults may be compromised in terms of their social networks and social capital, which may result in fewer opportunities for community integration. Addressing the needs of US Latinos with SAD may require more aggressive outreach. The combination of SAD and agoraphobia makes initiating a visit to providers particularly difficult, making hotlines, Internet-based programs, and home visits helpful avenues to educate and treat these individuals. Given that the group at highest risk for these 2 conditions is the immigrant group that arrived to the United States as adults, availability and proper training of bilingual providers is essential, since many immigrants do not have high levels of English language fluency. Our findings highlight the value of community-based surveys, since studies conducted in treatment settings are less likely to document the needs of monolingual Spanish-speaking immigrants.[46]

Clinicians working with Spanish-speaking Latinos may benefit from understanding the nature, severity, and profile of SAD among this population. Difficulties with retention or engagement in treatment may be misinterpreted by providers if they are unaware of their clients' phobic symptoms, which make these individuals uncomfortable outside of their home environments. This is the case for individuals with agoraphobia, since this disorder is characterized by extreme anxiety or avoidance of provoking situations in which escape may be difficult, such as using public transportation, driving a car, and being in a public place. Similarly, awareness is needed for therapists so that they focus on the prevention of maladaptive patterns of coping among their clients with anxiety disorders that may not take the form of substance use. Provider education of the unique comorbid patterns manifested by different cultural groups, including those of adult immigrants, is needed. This is crucial given the important relationship between accurate assessment and therapy processes and outcomes.[47]

In a recent review of cross-sectional and prospective studies from various regions of the world, higher SAD was associated with lower levels of education and income and being unemployed or unmarried.[2] The demographic correlates in this study were consistent with these findings but not among Latinos. This may be in part because the immigrant Latino group, which has a lower socioeconomic status relative to the US-born Latino group, also has a lower risk for lifetime SAD diagnosis. Although this contradicts the generally well-established connection between socioeconomic status and psychiatric morbidity,[5,18] Latino immigrants have been found to have equal or lower risk than their US-born counterparts, who often have higher levels of education and income.

In this study, females across both ethnic groups were not at higher risk than men for SAD. Although previous reports have shown a higher risk of anxiety disorders in women, not all SAD studies have reported sex differences, and sex differences for SAD are not as pronounced as they are for other anxiety disorders.[2] Other risk factors were found to be consistent with established findings. For example,

being employed was associated with lower risk of SAD across both Latinos and non-Latino whites. Resources to help individuals with SAD should include assistance to find and sustain employment. Pharmacologic and cognitive-behavioral treatments for SAD[48,49] should focus on the impact on employment and other functioning outcomes as well as symptom reduction.

The role that the process of immigration and adaptation to US culture may play in the emergence of SAD is not well understood. Our within-group analyses shed some light regarding the subgroups of US Latinos at highest risk for this disorder. A higher lifetime prevalence was found among Puerto Ricans, which highlights the need to consider the specific risk factors that may place this group at higher risk. Puerto Ricans living in the island of Puerto Rico may be more exposed to US culture than people in other places in Latin America. Indeed, it has been noted that Puerto Ricans do not consistently exhibit a protective effect of lifetime risk for psychiatric disorders associated with being born outside of the mainland United States that is frequently found among Mexican Americans, and particularly within anxiety disorders.[27]

Similarly, the relationship between language skills and SAD was somewhat unexpected. Higher English and Spanish proficiency would appear to be a critical protective factor against SAD, given that fears of public speaking are extremely common in this disorder. However, despite the fact that English is the predominant language spoken in the United States, individuals with a higher English proficiency were at higher risk for a 12-month or a lifetime diagnosis of SAD. Again, context and background may help to understand these otherwise counterintuitive findings. Language exposure, which is highly linked to proficiency, is confounded by the environment in which US Latinos grew up. As noted earlier, individuals in the United States report much higher rates of SAD than individuals in other countries, including those in Asia and Latin America. Therefore, the language abilities may reflect the protective effect of living outside of the United States, which has been established as a protective factor for mental health problems among Latinos.[13,50]

Research is needed to determine how navigating between 2 languages or growing up in a household in which a language other than English is spoken may predispose individuals for SAD. Some youth who grow up exposed to both English and Spanish experience difficulties mastering either language.[51] Given the early onset of SAD, it is possible that peer difficulties in school resulting from lack of English mastery may be involved. Social anxiety symptoms and behavior problems have been strongly linked to acculturative stress, which includes difficulties with English proficiency.[28,29]

The findings in this study raise questions about the role of cultural norms in the onset of SAD. A lower prevalence of SAD was reported for non-Latino whites after the age of 50 years relative to those aged 18 to 34 years. In contrast, higher risk is noted among these same age groups among Latinos. Older Latinos may expect to rely more heavily on family for social support, relative to older non-Latino whites. As they become older, US Latinos with SAD may have fewer networks outside of the family or may unexpectedly be without offspring living with them. This isolation may lead them to become more reclusive. The present study found that the majority of the late-arrival immigrants with SAD and agoraphobia were from this age group. Interpersonal domain difficulties at home or work due to social fears may be particularly difficult for Latinos if their cultural expectations include, to a larger extent than for other cultural groups, forming meaningful and close relationships. Lack of support from extended family or coworkers may create more distress for Latinos if this form of support is particularly valued within their culture. Unique cultural scripts, or expected patterns of social interactions, have been documented for Latinos[52] and terms like *simpatía*, *personalismo*, and *familism* have been used to describe the importance placed by Latinos on social connections.[53,54] Emphasis on these values may protect individuals from developing disorders such as SAD. At the same time, those with SAD or those at risk for the disorder may be vulnerable if they perceive themselves as disadvantaged in the social domain. For example, differences in expectations about marriage and cohabitation may result in higher rates of marriage among Latinos, which may be protective against SAD. On the other hand, Latinos with SAD who are not married may be especially hard on themselves or fear outside scrutiny because of cultural expectations.[55] Disentangling these important questions requires further research, especially from ethnographic accounts, clinical descriptions, and in-depth interviews.

The findings of this study are limited due to its cross-sectional design and by the use of retrospective reports, which are subject to recall bias. Only adults were surveyed, and therefore it is not known how applicable the results are to those under the age of 18 years. Future studies utilizing a prospective design may help clarify the relationships found, and they would be particularly valuable to understand the relationship between the onset of SAD, its clinical course, and the risk factors that affect those afflicted with this disorder.

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