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Comparative Prevalence, Correlates of Impairment, and Service Utilization for Eating Disorders across U.S. Ethnic Groups: Implications for Reducing Ethnic Disparities in Health Care Access for Eating Disorders

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Abstract

Objective—The study compared the prevalence, correlates of functional impairment, and service utilization for eating disorders across Latinos, Asians, and African Americans living in the U.S. to non-Latino Whites.

Method—Pooled data from the NIMH Collaborative Psychiatric Epidemiological Studies (CPES; [1]) were used.

Results—The prevalence of anorexia nervosa (AN) and binge-eating disorder (BED) were similar across all groups examined, but bulimia nervosa (BN) was more prevalent among Latinos and African Americans than non-Latino whites. Despite similar prevalence of BED among ethnic groups examined, lifetime prevalence of ABE was greater among each of the ethnic minority groups in comparison to non-Latino Whites. Mental health service utilization was lower among ethnic minority groups studied than for non-Latino whites for respondents with a lifetime history of any eating disorder.

Discussion—These findings suggest the need for clinician training and health policy interventions to achieve optimal and equitable care for eating disorders across all ethnic groups in the U.S.

Keywords

Anorexia Nervosa; Bulimia Nervosa; Binge-eating disorder; Ethnicity

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Notwithstanding the serious mortality, morbidity, and impairment associated with eating disorders [5, 6] a substantial percentage of individuals with an eating disorder do not receive care for this problem [7]. Although reports suggest ethnic disparities in access to care for an eating disorder in the U.S. [8], comparative data from nationally representative samples have previously been unavailable for examination of ethnic disparities in care receipt.

A small number of studies have addressed relative prevalence, risk, and service use for eating disorders in U.S. ethnic minorities using nationally representative data. However, these studies were limited in that each specific ethnic group (e.g., Latinos or African Americans) was only compared to Caucasians, with no cross-ethnic group relative comparisons. For example, using data collected through the National Latino and Asian American Study (NLAAS), Alegria et al. [10] and Nicdao et al. [11] studied lifetime and past year prevalence estimates and correlates of eating disorders among a national sample of Latinos and Asian Americans, respectively. In the Alegria et al. study [10], Latinos reported higher rates of BED and lower rates of AN and BN, as compared to the general population. Nicdao et al. [11] found a lower prevalence of AN and BN among Asian Americans as compared to the general population [11]. Regarding African Americans and Caribbean Black Americans, Taylor et al. [12] studied characteristics of eating disorders from data collected through the National Survey of American Life (NSAL). According to this survey, prevalence of any eating disorder was high among Black Americans, with BED as the most common diagnosis, followed by BN and AN.

To our knowledge, no previous studies have examined the prevalence, correlates of functional impairment, and service utilization for U.S. ethnic minorities with eating disorders using a single dataset. Thus, the aim of the current study is to examine ethnic diversity in prevalence, correlates of functional impairment, and service utilization for past year and lifetime eating disorders diagnosis in a nationally representative sample. To this end, we utilize pooled data from the NIMH Collaborative Psychiatric Epidemiological Studies (CPES; [1]) to compare data on AN, BN, BED, and any binge eating (ABE) in U.S. Latinos, Asians, and African Americans to non-Latino Whites.

DATA AND METHODS

The CPES Combined Dataset

Data for the current study were drawn from the CPES studies [1], which were originally collected by the University of Michigan Survey Research Center (SRC). Written informed consent was obtained from all participants of this survey after receiving a complete description of the study. Using an adaptation of a multiple-frame approach to estimation and inference for population characteristics [13, 14], the CPES studies combined three nationally representative U.S. samples: The National Survey of American Life (NSAL; [2]), The National Latino and Asian American Study (NLAAS; [3]), and the National Comorbidity Survey Replication (NCS-R; [4]). Using a design-based analysis of weights, the CPES studies were able to generate a single nationally representative sample of the U.S. population, thus allowing for the comparisons proposed in the current study. All of the prevalence estimates have been weighted to adjust for age differences. The primary focus of the CPES studies was the collection of mental health and service utilization epidemiological information for the general population with specific emphasis on ethnic minorities. Additional information about the design and methodology of the CPES can be found on its website [1].

All three nationally representative surveys have been described elsewhere [15] but are briefly summarized here. The NSAL is a nationally representative survey of household residents in the non-institutionalized Black population, who were 18 years or older, including 3,750

African Americans (response rate of 70.9%) and 1,621 Black respondents of Caribbean descent (response rate of 77.7%). Due to power concerns, only the African Americans respondents were included in the current study. The NLAAS [3] is also a nationally representative survey of household residents, who are aged 18 or older, in the non-institutionalized Latino and Asian populations of the conterminous United States. The final sample of the NLAAS was composed of 2,554 Latinos and 2,095 Asian Americans. The weighted response rates were: 73.2% for the final sample; 75.5% for the Latinos; and 65.5% for the Asians.

The NCS-R is a nationally representative sample with a response rate of 70.9% [4], with participants being adults 18 years of age or older who are English-speaking and living in civilian housing in the conterminous United States. The NCS-R was administered in two parts; Part I was administered to all respondents whereas only a sub sample of Part I respondents completed Part II of the survey. Part I included a core diagnostic assessment and Part II involved measures identical to the NLAAS including batteries of questions addressing service use and several impairment correlates of psychiatric illnesses and other disorders.

For the current study, data were pooled from the NLAAS, NSAL, and NCS-R samples, which included Latinos and Asians from the NLAAS, African Americans from the NSAL, and non-Latino whites from the NCS-R part II.

Ascertainment of race or ethnicity

Classification of racial and ethnic categories was based on respondents' self-report to a forced choice item with response options that correspond to the U.S. Census categories.

Diagnostic Assessment

Across the three surveys, the presence of lifetime and past year diagnosis of the various eating disorders were evaluated via the World Health Organization Composite International Diagnostic Interview (WMH-CIDI; [16]), which generates diagnoses that correspond to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; [17]). Using the algorithms proposed by Hudson and colleagues [7], which have been used by other investigators [10], we examined 12 month and lifetime prevalence of three eating disorder diagnostic categories: (1) Anorexia nervosa (AN); (2) Bulimia nervosa (BN); and (3) Binge-eating Disorder (BED); as well as a fourth category termed, Any Binge Eating (ABE). ABE was defined as any binge eating episode, with a reported sense of loss of control and overeating that occurred at least twice a week for at least 3 months, but does not require the additional phenomenologic features or marked distress necessary to meet DSM IV diagnostic criteria for BED. Each of the three diagnostic categories is mutually exclusive, whereas using this operationalization, ABE can co-occur with any of them. We also present data for a fifth category, any eating disorder, which was defined by a diagnosis of AN, or BN, or BED without ABE.

Role Impairment and Service Utilization

Functional impairment was measured by the WHO-DAS [18], which examines the following domains: days out of role, cognition, mobility, self-care, social and role functioning. Participants were asked about the number of days within the past 30 days when health or mental health-related problems restricted their ability to accomplish tasks related to each of these domains. As such, functional impairment in each of these domains is not specific to a diagnosis of eating disorder.

Information about mental health services utilization was requested from each of the CPES respondents. Access to mental health care was operationalized as a respondent having received any mental health treatment either in the past year or lifetime. Past year mental health treatment utilization was defined as at least one visit to a specialty mental health or general medical provider for mental health care within the past 12 months. A similar definition was implemented for lifetime service utilization.

Statistical Analyses

All analyses were conducted using STATA 8.0 statistical software [19]. Cross-tabulations were conducted comparing each of the ethnic minority groups to non-Latino whites. Following the recommendations of Meng and colleagues [20] for modeling strategies, Bayesian inference was used to estimate the prevalence rates for eating disorders due to the small sample sizes. Rao-Scott chi-squared tests [21] were used to analyze differences in prevalence of eating disorders across ethnic groups, functional impairment, and service use. All analyses for the entire sample were weighted for age and gender. However, analyses that were stratified by gender were weighted only for age. Consistent with previous research using this dataset, a level of significance of $p<0.01$ was chosen to adjust for multiple comparisons [9].

RESULTS

Lifetime and 12-month Bayesian Prevalence Estimates

Bayesian prevalence estimates across eating disorders for each of the ethnic/racial comparisons, weighted for age and gender, where appropriate, are presented in Table 1. Across all ethnic groups, AN was the least prevalent eating disorder diagnosis with 12-month Bayesian prevalence estimates ranging from 0.03% (Latinos and non-Latino Whites) to 0.06% (African Americans) and lifetime Bayesian prevalence estimates ranging from . 08% (Latinos) to .39% (non-Latino whites). Likewise, AN was the least prevalent eating disorder diagnosis for females across all ethnic groups, with 12 month Bayesian prevalence estimates ranging from .01% (African Americans) to .04% (Asians) and lifetime Bayesian prevalence estimates ranging from .12% (Latinos and African Americans) to .64% (Non Latino, Whites). No between group differences for these racial/ethnic categories in the 12-month or lifetime prevalence of AN reached the level of statistical significance set for this study.

BED was the most prevalent eating disorder diagnosis across groups with 12-month Bayesian prevalence estimates ranging from 0.55% (non-Latino whites) to 1.11% (Latinos) and lifetime estimates ranging from 1.24% (Asians) to 2.11% (Latinos). Bayesian 12-month prevalence estimates for BED in women ranged from .75% (non-Latina Whites) to 1.67% (Latinas) and lifetime estimates ranged from 1.66% (Asians) to 2.71% (Latinas). No between group differences for these racial/ethnic categories in the 12-month or lifetime prevalence of BED reached the level of statistical significance set for this study.

BN was the second most prevalent eating disorder diagnosis across all groups, with 12-month Bayesian prevalence estimates ranging from 0.16% (non-Latino whites) to 1.01% (Latinos), and lifetime prevalence estimates ranging from .51% (non-Latino whites) to 2.03% (Latinos).

ABE behavior had a 12-month prevalence ranging from 1.04% (non-Latino whites) to 2.72% (Latinos) and a lifetime prevalence ranging from 2.53% (non-Latino whites) to 5.6% (Latinos). With the exception of lifetime prevalence for non-Latina White females, the Bayesian 12-month and lifetime prevalence estimates for ABE exceeded the maximal combined prevalence of AN, BN, and BED for 12 months and lifetime in each of the racial

and ethnic strata examined. These analyses were also conducted controlling for education and results did not change significantly. As such, these data are not presented.

Relative prevalence differences among minority groups compared to non-Latino whites were similar for both men and women. Like women, men had lower frequencies of AN compared to other diagnoses, followed by BN, BED and ABE. However, the strength of the effect for any of the between-group differences decreased as the analysis was conducted by gender. This decrease was expected due to the smaller sample sizes. As such, findings for each gender should be interpreted cautiously and considered preliminary.

Prevalence Rates for Minority Groups Compared to Non-Latino Whites

There were no significant between group differences across racial and ethnic categories for 12 month or lifetime Bayesian prevalence estimates for AN or BED. Moreover, for BN, no significant between group differences were identified for 12-month or lifetime prevalence across racial and ethnic categories in females or for 12-month prevalence across ethnic and racial categories in males.

In contrast, an omnibus test for overall differences across groups in the lifetime prevalence of BN in males was significant (p=.0004). Likewise omnibus tests for overall differences across groups in both 12-month and lifetime prevalence of BN in the overall sample were significant (p=.002 and p=.0002, respectively). Specific comparisons revealed significantly higher lifetime prevalence estimates of BN for both Latinos and African Americans compared with non-Latino Whites (2.03% and 1.31% versus .51%; p=.0001 and p=.004, respectively). We also found significantly greater 12-month prevalence of BN for both Latinos and African Americans compared with non-Latino Whites. In gender-stratified analyses, however, specific comparisons demonstrated that only Latino males had a significantly different (higher) lifetime prevalence of BN compared with non-Latino, White males (1.73% versus .08%; p=.0011), whereas no other between group comparisons showed significant differences.

Significant overall differences across racial and ethnic groups were also identified for 12-month and lifetime prevalence estimates for any binge eating (p=.0006 and p<.0001, respectively). In gender-stratified analyses, significant differences across all groups were found for lifetime prevalence of ABE in both males in females (p=.002 and p=.0047, respectively) but not for 12-month prevalence. Specific comparisons revealed significantly higher lifetime prevalence estimates of ABE for Latinos, African Americans, and Asians compared with the non-Latino White reference group (5.6%, 4.83%, and 4.74% versus 2.53%; p<.0001, p=.0001, and p=.0036, respectively). Moreover, 12-month prevalence estimates were also significantly greater for Latinos and African Americans compared with non-Latino Whites. In gender-stratified comparisons, the lifetime prevalence of ABE was higher for Latinos than non-Latino Whites in both males and females and was also higher for African Americans than non Latino Whites in females.

Functional Impairment Associated with Eating Disorders

Tables 2–4 show the functional impairment across eating disorders for each of the minority group with comparisons. The entire sample analyses were adjusted by age and gender, while the gender stratified analyses were adjusted only by age. African Americans with any eating disorder (AN, BN, or BED, exclusive of those with binge eating only) reported significantly greater levels of impairment with respect to days out of role due to mental disorder, cognition, mobility, and role functioning compared with the non-Latino White reference group (p<.0001, *p*=.0005, *p*=.0097, and p<.0001, respectively). African Americans also reported significantly greater impairment in 2 of 6 domains for men and in 3 of 6 domains

for women, when compared with the non-Latino White reference groups. With the exception of less impairment report with respect to mobility for Asians, impairment across multiple domains was comparable between Latinos and Asians with any eating disorder (AN, BN, or BED) and the non-Latino White reference group. There were no significantly differences in impairment across any of the domains in African Americans, Latinos, or Asians with binge-eating only compared with the non-Latino White reference groups.

Service Utilization Associated with Eating Disorders

Mental health service utilization for respondents with a lifetime history of any eating disorder (AN, BN, or BED) was higher for non-Latino whites than for Latinos, Asians, or African Americans (75.8% versus 61.65%, 63.22%, and 62.21%, respectively). More non-Latino whites with a lifetime history of any eating disorder had utilized mental health services in the 12 months preceding the survey than Latinos, Asians, or African Americans with a lifetime history of any eating disorder as well. Table 5 shows the reported service utilization for each of the minority groups with comparisons. All comparisons regarding lifetime service utilization demonstrated that ethnic minorities with a lifetime history of any eating disorder (AN, BN, or BED) were significantly less likely to utilize mental health services than non-Latino whites. A similar pattern of significantly greater lifetime mental health service utilization for non-Latino Whites compared with Latinos, Asians, and African Americans was also true for women and men, with exception of Asian men. With respect to specific eating disorder diagnoses, both Latinos and Asians with a lifetime history of BN were less likely to have utilized mental health services in their lifetime than non-Latino Whites with a lifetime history of BN. Notably, and in contrast to the prevailing mental health service use pattern, we found that Latinos and African Americans with a lifetime history of AN had a (non-significantly) greater utilization of mental health services than non Latino Whites.

DISCUSSION

This is the first paper to compare prevalence of eating disorders across all major ethnic minority groups in the U.S. using pooled data from three major nationally representative datasets (NLAAS, NSAL, and NCS-R). Likewise, it is the first study to examine mental health service utilization and functional impairment with respect to individuals with eating disorders across these groups. Our findings support that the 12 month and lifetime prevalence of AN, BN, and BED is similar across non-Latino White, Latina, Asian, and African American women in the U.S. We also did not find that non-Latino Whites (either men, women, or the overall sample) had greater prevalence of either AN, BN, BED, or any binge eating when compared with each of the other major ethnic groups.

However, we found several significant between group differences with respect to BN and any binge eating. Specifically, our data support that both 12-month and lifetime prevalence of BN is significantly greater in Latinos and African Americans. Lifetime prevalence of BN is also significantly greater in Latino men than in the reference group non-Latino White men. Ethnic diversity in Bayesian prevalence estimates was remarkable for our category, any binge eating. Compared with non-Latino White reference groups, any binge eating has a significantly higher lifetime prevalence in Latinos (overall, in men, and in women), Asians (overall), African Americans (overall and in women) and a significantly higher 12-month prevalence in Latinos (overall and in women) and African Americans (overall and in women).

Although our findings are consistent with past research documenting the low prevalence of AN for Latinos and African Americans [10, 22] and low prevalence rates of eating disorders in general among Asians [11, 23], our data did not support that the prevalence of AN is

significantly different across these major ethnic groups in the U.S. This is also the first study to show that all three minority groups (Latinos, Asians and African Americans) report more binge eating symptoms than their non-Latino white counterparts.

Finally, functional impairment associated with a lifetime history of any eating disorder was comparable across the ethnic groups studied, with the exception of African Americans. However, despite similar or greater levels of eating pathology identified in our study—and greater functional impairment reported by African American respondents—we found that Latinos, Asians, and African Americans with any eating disorder reported utilization of mental health services less commonly than their non-Latino Whites counterparts.

Ethnic disparities in mental health service utilization among individuals with a lifetime history of an eating disorder suggest there may be unmet service needs among Latinos, Asians, and African Americans. These service utilization disparities as well as the higher functional impairment identified in African Americans with eating disorders, underscores the importance of addressing specific minority issues in providing health care to individuals with eating disorders.

We also found that any binge eating—irrespective of eating disorder diagnosis—is more prevalent in each of the major ethnic minority groups studied than in non-Latino Whites. Given that our data support that any binge eating may be associated with functional impairment, even in the absence of a clinical diagnosis of AN, BN, or BED, further investigation is warranted to ascertain its clinical significance. Health insurance benefits that exclude coverage for this presentation may be inadequate and may differentially impact ethnic minority patients. A major barrier in providing adequate treatment for eating disorder patients has involved constraints imposed by managed care [24–25], such as restrictions in the number of sessions allowed [24]. One study found that some patients were denied inpatient treatment, and more patients were not able to receive coverage for adequate outpatient treatment [25].

Several study limitations should be considered when interpreting these findings. Because diagnostic assessment is based upon retrospective self-report, ethnic differences in response and recall bias are both possible. For example, the lower impairment in some domains reported by the Asian population may be a consequence of how impairment is perceived and reported in relation to cultural values. Interview adaptations are usually necessary to encompass eastern cultural perceptions [26] but the scale used in this study to measure impairment (WHO-DAS) was validated only in western countries [27]. Also, Asians may report fewer symptoms of eating behavior. [28] Considering these limitations, it would be premature to assume that Asians are less impaired by their eating disorders symptoms than are other ethnic groups.

Furthermore, our assignment of respondents into large categories defined by major U.S. census categories may have obscured important heterogeneity within each of these groups. For example, there are data suggesting significant differences between African American Blacks and Caribbean Blacks [12]. The same can be inferred regarding the Latino population, which could be further divided into subgroups according to their ethnic origin (Brazilians, Mexicans, etc). Finally, we were unable to evaluate the relative prevalence of eating disorders among Native Americans since these data bases did not include this population.

These data support the conclusion that eating disorders are equally as common among Latinos, Asians, and African Americans groups than among non-Latino whites in the U.S. Overall, both BN and any binge eating appear to be more prevalent in these ethnic groups than in non-Latino whites. However, ethnic minorities with eating disorders utilize mental

health services less frequently than do non-Latino whites, suggesting an unmet need for eating disorder treatment among ethnic minority groups in the U.S.

Our findings suggest that ethnic disparities in access to care for eating disorders are consistent with reports from other studies in the U.S. [8] and in the UK [33]. Although factors underlying these disparities are not completely understood, clinician practice and referral patterns, social stereotypes, as well as cultural diversity in treatment seeking and symptom presentation may all contribute [29, 30]. Clinician education and community outreach about the prevalence and differential service utilization for eating disorders across major U.S. ethnic groups are therefore essential considerations for promoting optimal and equitable access to care for all patients with an eating disorder.

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Table 1

Bayesian CPES Lifetime and Past Year Prevalence of Eating Disorders

	NCSR Non-Latino White		NLASS Latino		NLAAS Asian		NSAL African American		White vs Latino	White vs Asian	White vs African American	Omnibus tests
	Weighted Percent/Mean	S.E.	Weighted Percent/Mean	S.E.	Weighted Percent/Mean	S.E.	Weighted Percent/Mean	S.E.	P value	P value	P value	P value
All[+]												
Life Time Anorexia Nervosa	0.39%	0.13%	0.08%	0.07%	0.10%	0.09%	0.15%	0.09%	0.0363	0.0797	0.1377	0.3350
Life Time Bulimia-Nervosa	0.51%	0.16%	2.03%	0.35%	1.50%	0.37%	1.31%	0.23%	0.0001***	0.0146	0.0040*	0.0002**
Life Time Binge-eating disorder w/ hierarchy	1.41%	0.25%	2.11%	0.34%	1.24%	0.34%	1.48%	0.24%	0.1011	0.6860	0.8476	0.4254
Life Time Any binge-eating	2.53%	0.35%	5.60%	0.59%	4.74%	0.68%	4.83%	0.47%	0.0000***	0.0036*	0.0001***	0.0000***
Life Time ABE Without AN/BN/BED	0.64%	0.19%	1.75%	0.33%	2.01%	0.42%	2.10%	0.32%	0.0036*	0.0029*	0.0001***	0.0001***
Past Year Anorexia Nervosa	0.03%	0.04%	0.03%	0.04%	0.05%	0.07%	0.06%	0.05%	0.9985	0.7582	0.6369	0.9833
Past Year Bulimia-Nervosa	0.16%	0.08%	1.01%	0.26%	0.58%	0.24%	0.60%	0.14%	0.0014*	0.0924	0.0060*	0.0020*
Past Year Binge-eating disorder w/ hierarchy	0.55%	0.16%	1.11%	0.26%	0.70%	0.26%	0.68%	0.18%	0.0623	0.6030	0.5729	0.4200
Past Year Any binge-eating	1.04%	0.21%	2.72%	0.41%	2.32%	0.49%	2.13%	0.31%	0.0003**	0.0170	0.0033*	0.0006**
Past Year ABE Without AN/BN/BED	0.34%	0.13%	0.81%	0.23%	1.06%	0.34%	1.02%	0.22%	0.0732	0.0459	0.0077*	0.0303
Male[++]												
Life Time Anorexia Nervosa	0.14%	0.12%	0.03%	0.07%	0.07%	0.12%	0.18%	0.14%	0.4436	0.6977	0.8318	0.8712
Life Time Bulimia-Nervosa	0.08%	0.08%	1.73%	0.50%	1.14%	0.50%	0.90%	0.32%	0.0011*	0.0339	0.0128	0.0004**
Life Time Binge-eating disorder w/ hierarchy	0.94%	0.33%	1.54%	0.45%	0.84%	0.42%	0.78%	0.31%	0.2800	0.8597	0.7265	0.7224
Life Time Any binge-eating	2.01%	0.47%	5.43%	0.87%	4.29%	0.95%	4.10%	0.71%	0.0005**	0.0314	0.0134	0.0020*
Life Time ABE Without AN/BN/BED	0.94%	0.33%	2.13%	0.55%	2.22%	0.64%	2.40%	0.52%	0.0660	0.0753	0.0174	0.0086*
Past Year Anorexia Nervosa	0.04%	0.07%	0.03%	0.07%	0.07%	0.11%	0.10%	0.10%	0.9955	0.8402	0.5866	0.9829
Past Year Bulimia-Nervosa	0.04%	0.05%	1.08%	0.41%	0.49%	0.33%	0.20%	0.13%	0.0122	0.1787	0.2758	0.0557
Past Year Binge-eating disorder w/ hierarchy	0.36%	0.19%	0.58%	0.30%	0.46%	0.32%	0.41%	0.25%	0.5296	0.7810	0.8659	0.9637

	NCSR Non-Latino White		NLASS Latino		NLAAS Asian		NSAL African American		White vs Latino	White vs Asian	White vs African American	Omnibus tests
	Weighted Percent/Mean	S.E.	Weighted Percent/Mean	S.E.	Weighted Percent/Mean	S.E.	Weighted Percent/Mean	S.E.	P value	P value	P value	P value
Past Year Any binge-eating	0.88%	0.30%	2.23%	0.57%	2.33%	0.69%	1.77%	0.46%	0.0351	0.0543	0.1079	0.1064
Past Year ABE Without AN/BN/BED	0.48%	0.21%	1.00%	0.39%	1.35%	0.54%	1.24%	0.37%	0.2409	0.1351	0.0744	0.1592
Female[++]												
Life Time Anorexia Nervosa	0.64%	0.24%	0.12%	0.12%	0.13%	0.15%	0.12%	0.09%	0.0518	0.0711	0.0414	0.3363
Life Time Bulimia-Nervosa	0.97%	0.32%	2.34%	0.49%	1.87%	0.55%	1.74%	0.31%	0.0189	0.1588	0.0834	0.1368
Life Time Binge-eating disorder w/ hierarchy	1.91%	0.41%	2.71%	0.53%	1.66%	0.55%	2.22%	0.38%	0.2356	0.7104	0.5865	0.6855
Life Time Any binge-eating	3.08%	0.51%	5.78%	0.77%	5.22%	0.97%	5.60%	0.60%	0.0035*	0.0522	0.0014*	0.0047*
Life Time ABE Without AN/BN/BED	0.32%	0.17%	1.34%	0.37%	1.78%	0.54%	1.78%	0.34%	0.0110	0.0088*	0.0001***	0.0001***
Past Year Anorexia Nervosa	0.02%	0.04%	0.02%	0.04%	0.04%	0.09%	0.01%	0.03%	0.9937	0.8162	0.9148	0.9978
Past Year Bulimia-Nervosa	0.28%	0.15%	0.94%	0.31%	0.68%	0.36%	1.02%	0.26%	0.0556	0.3079	0.0135	0.0833
Past Year Binge-eating disorder w/ hierarchy	0.75%	0.25%	1.67%	0.41%	0.96%	0.41%	0.97%	0.24%	0.0570	0.6574	0.5225	0.4245
Past Year Any binge-eating	1.22%	0.31%	3.24%	0.59%	2.31%	0.68%	2.52%	0.40%	0.0024*	0.1453	0.0097*	0.0123
Past Year ABE Without AN/BN/BED	0.18%	0.13%	0.61%	0.26%	0.76%	0.41%	0.77%	0.23%	0.1361	0.1778	0.0247	0.1330

Note:

[+] Prevalence for the entire sample was adjusted by age and gender.

[++] Stratified analyses for gender were adjusted by age.

* $p < .01$;

** $p < .001$ and

*** $p < .0001$

Table 2

Traditional Functional Impairment Related to Eating Disorder Diagnosis: Days out of role and Cognition

	Days out of Role				Cognition			
	NCSR Non-Latino White	**NLASS Latino**	**NLAAS Asian**	**NSAL African American**	**NCSR Non-Latino White**	**NLASS Latino**	**NLAAS Asian**	**NSAL African American**
All[+]								
Life Time Anorexia Nervosa	0.86	0.00	0.00	0.00	2.89	0.09	14.17	4.21
Life Time Bulimia-Nervosa	2.26	0.19	0.00	1.28	4.85	2.90	1.02	5.73
Life Time Binge-eating disorder w/hierarchy	0.63	1.22	1.60	3.41	2.98	3.27	5.05	3.44
Life Time Any binge-eating	0.75	0.70	0.44	2.00	3.62	2.92	1.71	4.16
Life Time ABE Without AN/BN/BED	0.23	0.46	0.04	1.44	5.07	2.11	0.13	3.59
Life Time Any Disorder Without ABE	0.58	0.92	0.59	1.75***	1.85	1.75	2.92	3.16**
Male[++]								
Life Time Anorexia Nervosa	0.00		0.00	0.00	0.13		0.00	2.52
Life Time Bulimia-Nervosa	12.44	0.42	0.00	0.39	11.06	4.39	0.33	2.18
Life Time Binge-eating disorder w/hierarchy	0.80	0.17	0.56	8.31	3.99	3.03	3.21	3.08
Life Time Any binge-eating	0.75	0.43	0.10	2.46	5.17	2.58	0.70	1.90
Life Time ABE Without AN/BN/BED	0.00	0.62	0.00	1.43	6.29	0.72	0.08	1.40
Life Time Any Disorder Without ABE	0.50	0.89	0.07*	1.72*	1.29	1.89	3.87	2.61
Female[++]								
Life Time Anorexia Nervosa	1.04	0.00	0.00	0.00	3.49	0.09	19.03	7.68
Life Time Bulimia-Nervosa	1.07	0.03	0.00	1.75	4.12	1.84	1.38	7.59
Life Time Binge-eating disorder w/hierarchy	0.54	1.88	2.07	1.93	2.48	3.42	5.89	3.55
Life Time Any binge-eating	0.76	0.96	0.74	1.68	2.59	3.23	2.58	5.72
Life Time ABE Without AN/BN/BED	0.82	0.23	0.09	1.44	1.34	4.06	0.21	6.52
Life Time Any Disorder Without ABE	0.65	0.94	1.05	1.79*	2.35	1.63	2.09	3.66

Note:

[+]Functional impairment for each domain of the entire sample was adjusted by age and gender.

[++]Stratified analyses for gender were adjusted by age.

Significance level set at $p < .01$, all comparisons against non-Latino Whites.

* $p < .01$;

** $p < .001$ and

*** $p < .0001$

Table 3

Traditional Functional Impairment Related to Eating Disorder Diagnosis: Mobility and Self-Care

	Mobility				Self-Care			
	NCSR Non-Latino White	NLASS Latino	NLAAS Asian	NSAL African American	NCSR Non-Latino White	NLASS Latino	NLAAS Asian	NSAL African American
All								
Life Time Anorexia Nervosa	13.98	1.77	13.16	28.59	1.18	0.00	10.79	20.66
Life Time Bulimia-Nervosa	7.68	5.34	0.80	9.08	1.32	1.36	1.12	5.56
Life Time Binge-eating disorder w/hierarchy	9.35	6.51	2.63	9.20	2.02	0.31	0.39	1.02
Life Time Any binge-eating	9.48	5.74	1.74*	9.10	1.50	0.80	0.65	2.37
Life Time ABE Without AN/BN/BED	11.96	4.09	1.70	8.93	0.60	0.63	0.46	1.24
Life Time Any Disorder Without ABE	5.79	6.09	2.97*	7.71*	1.04	1.43	1.50	1.55
Male								
Life Time Anorexia Nervosa	0.00	.	0.00	33.58	0.00	.	0.00	23.51
Life Time Bulimia-Nervosa	16.12	10.97	0.06	10.56	4.92	2.99	0.00	6.57
Life Time Binge-eating disorder w/hierarchy	11.83	1.58	5.06	3.68	2.04	0.08	1.25	0.00
Life Time Any binge-eating	12.09	4.26	0.94	5.42	1.09	1.02	0.23	1.77
Life Time ABE Without AN/BN/BED	12.33	1.13	0.02	3.83	0.20	0.24	0.00	0.39
Life Time Any Disorder Without ABE	4.37	5.88	3.77	6.57	0.68	1.25	0.79	1.69
Female								
Life Time Anorexia Nervosa	16.99	1.77	17.67	18.38	1.43	0.00	14.50	14.83
Life Time Bulimia-Nervosa	6.69	1.37	1.20	8.30	0.90	0.21	1.72	5.03
Life Time Binge-eating disorder w/hierarchy	8.12	9.59	1.53	10.88	2.01	0.45	0.00	1.33
Life Time Any binge-eating	7.75	7.10	2.44	11.63	1.77	0.60	1.02	2.78
Life Time ABE Without AN/BN/BED	10.82	8.24	4.11	15.72	1.81	1.17	1.13	2.36
Life Time Any Disorder Without ABE	7.03	6.27	2.25***	8.76	1.35	1.59	2.13	1.42

Note:

+Functional impairment for each domain of the entire sample was adjusted by age and gender.

++Stratified analyses for gender were adjusted by age.

Significance level set at $p < .01$, all comparisons against non-Latino Whites.

* $p < .01$;

** $p < .001$ and

*** $p < .0001$

Table 4

Functional Impairment Related to Eating Disorder Diagnosis: Social and Role Functioning

	Social Functioning				Role Functioning			
	NCSR Non-Latino White	**NLASS Latino**	**NLAAS Asian**	**NSAL African American**	**NCSR Non-Latino White**	**NLASS Latino**	**NLAAS Asian**	**NSAL African American**
All								
Life Time Anorexia Nervosa	0.53	0.00	5.21	3.74	33.85	5.31	30.36	45.53
Life Time Bulimia-Nervosa	3.24	1.31	0.91	2.94	31.26	16.91	10.10	25.23
Life Time Binge-eating disorder w/hierarchy	1.07	1.00	2.43	3.72	20.56	18.84	16.62	30.77
Life Time Any binge-eating	2.11	1.68	0.95	3.09	23.47	18.81	12.55	25.54
Life Time ABE Without AN/BN/BED	4.39	2.69	0.08	2.86	26.92	18.22	10.98	21.63
Life Time Any Disorder Without ABE	1.19	1.15	2.18	1.82	14.27	16.63	14.42	26.64***
Male								
Life Time Anorexia Nervosa	0.00	.	1.00	0.00	0.00	.	0.00	57.09
Life Time Bulimia-Nervosa	6.64	2.76	0.09	0.87	41.47	28.60	3.37	29.18
Life Time Binge-eating disorder w/hierarchy	1.44	0.49	2.73	1.42	22.03	14.24	13.73	41.30
Life Time Any binge-eating	3.42	1.09	0.51	1.13	24.36	17.58	8.45	21.86
Life Time ABE Without AN/BN/BED	5.75	0.25	0.00	1.13	26.71	11.26	8.73	12.57
Life Time Any Disorder Without ABE	1.04	0.91	4.14	1.44	11.28	11.92	11.24	23.47***
Female								
Life Time Anorexia Nervosa	0.64	0.00	6.66	11.41	41.13	5.31	40.77	21.86
Life Time Bulimia-Nervosa	2.84	0.28	1.35	4.03	30.07	8.65*	13.71	23.17
Life Time Binge-eating disorder w/hierarchy	0.89	1.31	2.30	4.42	19.83	21.72	17.94	27.57
Life Time Any binge-eating	1.24	2.22	1.33	4.44	22.89	19.94	16.10	28.07
Life Time ABE Without AN/BN/BED	0.21	6.13	0.19	5.16	27.57	27.99	14.20	33.70
Life Time Any Disorder Without ABE	1.32	1.35	0.44*	2.17*	16.90	20.74	17.25	29.55***

Note:

+ Functional impairment for each domain of the entire sample was adjusted by age and gender.

++ Stratified analyses for gender were adjusted by age.

Significance level set at $p < .01$, all comparisons against non-Latino Whites.

* $p < .01$;

** $p < .001$ and

*** $p < .0001$

Table 5

Lifetime and Past Year Service Utilization Rates

	Lifetime Any Service Use				Past Year Any Service Use			
	NCSR Non-Latino White	**NLASS Latino**	**NLAAS Asian**	**NSAL African American**	**NCSR Non-Latino White**	**NLASS Latino**	**NLAAS Asian**	**NSAL African American**
All[+]								
Life Time Anorexia Nervosa	75.61%	78.78%	30.36%	100.00%	30.57%	78.78%	30.36%	67.19%
Life Time Bulimia-Nervosa	77.35%	42.83%*	38.70%*	80.13%	44.33%	24.40%	22.97%	24.30%
Life Time Binge-eating disorder w/hierarchy	78.89%	54.07%	54.85%	71.11%	44.58%	30.19%	23.62%	18.07%*
Life Time Any binge-eating	75.98%	47.42%***	33.63%***	68.30%	42.49%	23.51%*	14.05%***	20.96%**
Life Time ABE Without AN/BN/BED	71.49%	47.05%	17.25%***	58.11%	38.82%	17.81%	3.27%**	19.92%
Life Time Any Disorder Without ABE	75.80%	61.65%***	63.22%**	62.21%***	30.79%	27.62%	25.31%	22.30%***
Male[++]								
Life Time Anorexia Nervosa	100.00%	.	0.00%	100.00%	32.17%	.	0.00%	100.00%
Life Time Bulimia-Nervosa	41.47%	23.06%	6.54%	83.08%	41.47%	14.04%	0.00%	31.92%
Life Time Binge-eating disorder w/hierarchy	68.15%	27.16%	34.06%	41.47%	33.35%	10.51%	12.45%	15.53%
Life Time Any binge-eating	68.76%	30.04%**	15.10%***	61.03%	36.74%	10.11%*	3.30%***	18.48%
Life Time ABE Without AN/BN/BED	73.13%	37.42%	12.53%**	57.41%	41.24%	6.81%	1.76%*	13.78%
Life Time Any Disorder Without ABE	67.71%	54.14%*	61.96%	52.09%***	25.04%	23.55%	23.69%	18.05%*
Female[++]								
Life Time Anorexia Nervosa	70.36%	78.78%	40.77%	100.00%	30.23%	78.78%	40.77%	0.00%
Life Time Bulimia-Nervosa	81.53%	56.79%	55.97%	78.59%	44.66%	31.71%	35.31%	20.32%
Life Time Binge-eating disorder w/hierarchy	84.18%	70.90%	64.34%	80.13%	50.10%	42.48%	28.72%	18.85%*
Life Time Any binge-eating	80.77%	63.49%	49.68%*	73.30%	46.30%	35.90%	23.37%	22.67%*
Life Time ABE Without AN/BN/BED	66.51%	60.57%	24.02%	59.05%	31.41%	33.26%	5.43%	28.10%
Life Time Any Disorder Without ABE	82.90%	68.18%**	64.35%***	71.42%***	35.84%	31.17%	26.74%	26.18%**

Note:

[+]Service Utilization for the entire sample was adjusted by age and gender.

[++]Stratified analyses for gender were adjusted by age.

Significance level set at $p < .01$, all comparisons against non-Latino Whites.

* $p < .01$;

** $p < .001$ and

*** $p < .0001$