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Prevalence, Risk, and Correlates of Posttraumatic Stress Disorder across Ethnic and Racial Minority Groups in the U.S

Margarita Alegría, Phd,
Center for Multicultural Mental Health Research, Cambridge Health Alliance, Somerville, MA, and Harvard Medical School, Boston, MA, 120 Beacon St., 4th Floor, Somerville, MA 02143, Phone: (617) 503-8447, Fax: (617) 503-8430

Lisa R. Fortuna, MD, MPH,
Department of Psychiatry, University of Massachusetts Medical School, Worcester, MA, University of Massachusetts Medical School, Department of Psychiatry, Biotech1, Rm. 115, Worcester, MA 01655, Phone: (508)856-7842; Fax: (508)856 6426

Julia Y. Lin, PhD,
Cooperative Studies Program Coordinating Center, VA Palo Alto Healthcare System, Palo Alto, CA, Cooperative Studies Program Coordinating Center (151K), VA Palo Alto Healthcare System, 701 B. N. Shoreline Blvd., Mountain View, CA 94043-3208, Phone: (650)493-5000, option 1, then option 2 (for Menlo Park), ext. 27974; Fax: (650)852-3228

L. Frances Norris, PhD,
National Center for PTSD and Department of Psychiatry, Dartmouth Medical School, Hanover, NH, NCPTSD, VA Medical Center, 215 North Main Street, White River Junction VT 05009, Phone: (802)-296-5132; (Fax): 802-296-5135

Shan Gao, MS,
Department of Biostatistics and Computational Biology, University of Rochester Medical Center, Rochester, NY, University of Rochester Medical Center, School of Medicine and Dentistry, 601 Elmwood Ave, Box 630, Rochester, NY 14642, Phone: (585)275-1651; Fax: (585) 295-9622

David T. Takeuchi, PhD,
School of Social Work, University of Washington, Seattle, WA, University of Washington, 4101 15th Avenue, NE, Seattle, Washington 98105-6299, Phone: (206) 543-5133; Fax: (206) 221-3910

James S. Jackson, Phd,
Department of Psychology, University of Michigan, Ann Arbor, MI, Office of the Director, 426 Thompson Street, Ann Arbor, MI 48106, Phone: (734)763-2491; Fax: 734 764 3520

Patrick E. Shrout, Phd, and
Department of Psychology, New York University, NY, NY, Department of Psychology, New York University, 6 Washington Place, Room 455, New York, NY 10003, Phone: (212)-998-7895; Fax: (212)-995-4866

Anne Valentine, MPH
Center for Multicultural Mental Health Research, Cambridge Health Alliance and Harvard Medical School, 120 Beacon St., 4th Floor, Somerville, MA 02143, Phone: (617) 503-8451; Fax: (617) 503-8430

Margarita Alegría: malegria@charesearch.org; Lisa R. Fortuna: Lisa.Fortuna@umassmed.edu; Julia Y. Lin: Julia.Lin@va.gov; L. Frances Norris: fran.norris@dartmouth.edu; Shan Gao: Shan_Gao@URMC.Rochester.edu; David T.

Correspondence regarding this article should be addressed to: Margarita Alegría, Center for Multicultural Mental Health Research, 120 Beacon Street, 4th floor, Somerville, MA 02143, Phone: (617) 503-8440; Fax: (617) 503-8430; malegría@charesearch.org.

Takeuchi: dt5@u.washington.edu; James S. Jackson: jamessj@umich.edu; Patrick E. Shrout: pat.shrout@nyu.edu; Anne Valentine: avalentine@charesearch.org

Abstract

Objectives—We assess whether posttraumatic stress disorder (PTSD) varies in prevalence, diagnostic criteria endorsement, and type and frequency of traumatic events (PTEs) among a nationally representative U.S. sample of 5071 non-Latino whites, 3264 Latinos, 2178 Asians, 4249 African Americans, and 1476 Afro-Caribbeans.

Methods—PTSD and other psychiatric disorders were evaluated using the World Mental Health-Composite International Diagnostic Interview (WMH-CIDI) in a national household sample that oversampled ethnic/racial minorities (n=16,238) but was weighted to produce results representative of the general population.

Results—Asians have lower prevalence rates of probable lifetime PTSD while African Americans have higher rates as compared to non-Latino whites, even after adjusting for type and number of exposures to traumatic events, and for sociodemographic, clinical and social support factors. Afro-Caribbeans and Latinos seem to demonstrate similar risk to non-Latino whites, adjusting for these same covariates. Higher rates of probable PTSD exhibited by African Americans and lower rates for Asians, as compared to non-Latino whites, do not appear related to differential symptom endorsement, differences in risk or protective factors or differences in types and frequencies of PTEs across groups.

Conclusions—There appears to be marked differences in conditional risk of probable PTSD across ethnic/racial groups. Questions remain about what explains risk of probable PTSD. Several factors that might account for these differences are discussed as well as the clinical implications of our findings. Uncertainty of the PTSD diagnostic assessment for Latinos and Asians requires further evaluation.

Keywords

Posttraumatic Stress Disorders across racial and ethnic minority groups; diagnosis

INTRODUCTION

Lifetime prevalence rates of posttraumatic stress disorder (PTSD) in the U.S. population range between 6.8 and 12.3 percent,[1] with several studies reporting marked ethnic/racial differences.[2–4] Some evidence points to higher rates of lifetime prevalence of PTSD among African Americans (8.7%) compared to non-Latino whites (7.4%) or Asians (4.0%).[5] Other findings suggest either no difference in prevalence rates between African Americans, Latinos and non-Latino whites[7] or only a weak link between race/ethnicity and risk of PTSD.[8]

Even when ethnic/racial differences in PTSD are found, they are not well understood. While African Americans report lower rates of exposure to traumatic events than non-Latino whites, their risk of developing PTSD following trauma exposure is higher after adjusting for gender, age and type of exposure.[5] Conditional risks for PTSD are also reported as higher among Latinos than non-Latino whites,[6] while Asians report lower risk for PTSD after exposure. Prevalence rates could also vary among ethnic/racial groups that experience traumatic events but fail to report intense fear, helplessness or horror. Differential receipt of social support from family or friends, a buffer for developing PTSD,[12] can also vary across race/ethnicity. Additionally, there is evidence that less acculturated individuals report higher levels of PTSD symptoms[13,14] than more acculturated individuals. As a result, inconsistent findings may result from differences in the type and frequency of traumatic exposure,[9]

differences in underlying risk (e.g., childhood psychiatric illness),[5] or protective factors (e.g., higher education,[5] nativity[13,14] or greater social support),[10] and/or differential reactions to traumatic events, as ascertained by symptom endorsement.[11]

Reconciling disparate findings is challenging as most prevalence studies use regional rather than national samples, employ varied methods and adjust for diverse risks and protective factors. To date, Roberts and colleagues' study [5] is the only one using a nationally representative sample. We build upon this work using the Collaborative Psychiatric Epidemiology Surveys (CPES) to test: 1) whether there are differences in risk and protective factors as well as in PTSD prevalence across major ethnic/racial groups; 2) if so, whether these differences appear associated with variations in type of trauma or in patterns of symptom endorsement; and 3) whether these differences remain when adjusted for sociodemographic factors (education, nativity), clinical factors (psychiatric illnesses), support factors (family and friend support), type and number of traumatic exposures, and for variations in symptom endorsement.

METHODS

Data

We used the CPES pooled dataset of the National Latino and Asian American Study (NLAAS),[15] the National Comorbidity Survey Replication (NCS-R)[16] and the National Survey of American Life (NSAL).[17] The studies, conducted between 2001 and 2003, all share a common sampling strategy,[18] allowing the data to be treated as coming from a single, nationally-representative study.[19] The sampling weights are inversely proportional to the selection probabilities and are used in survey analysis for population level inferences. The data represent residents (≥18 years) in the non-institutionalized population of the contiguous U.S. It includes 5,071 non-Latino whites, 3,264 Latinos, 2,178 Asians, 4,249 African Americans, and 1,476 Afro-Caribbeans (16,238 total sample). The standard errors of the estimates take into account the complex sample design. The sample was drawn as household clusters and weighted to represent the nation, thus the precision of prevalence estimates is less than that generated by simple random sampling. One way to appreciate these design effects is to calculate the effective sample size (of independent observations) that would give the same precision for estimating lifetime PTSD prevalence rates. These are 2,775 for non-Latino whites, 2,917 for Latinos, 899 for Asians, 3,491 for African Americans, and 378 for Afro-Caribbeans.

Weighted response rates from the NLAAS (with interviews conducted in English, Spanish, Mandarin, Tagalog and Vietnamese) were 75.5% for Latinos and 65.6% for Asians.[19] Response rate in the NCS-R for all groups was 70.9%. In the NSAL the response rate was 70.9% for African Americans and 77.7% for Afro-Caribbeans.[17]

Written informed consent was obtained from all participants and study methods were approved by the Institutional Review Boards at the principal investigators' institutions.

Measures

PTSD and Other Psychiatric Disorders—Using DSM-IV criteria, PTSD and other psychiatric disorders were assessed using the World Mental Health Composite International Diagnostic Interview (WMH-CIDI), administered by trained lay interviewers. DSM-IV criteria define PTSD as a psychiatric syndrome resulting from trauma exposure (Criterion A1) that resulted in intense fear, helplessness or horror at the time of exposure (Criterion A2) in addition to three groups of symptoms: 1) re-experiencing of the trauma (Criterion B); 2) avoidance of activities reminiscent of exposure and/or emotional numbing (Criterion C);

and 3) hyperarousal (Criterion D). Further, symptoms must last at least one month (Criterion E) and result in distress and/or impairment (Criterion F). The CIDI asks about specific potentially traumatic events (PTEs), followed by questions on duration and severity of symptoms in each of the PTSD symptom clusters. The CIDI-PTSD module is dichotomously scored as meeting DSM-IV criteria or not.

We use the term "probable lifetime PTSD" for two reasons. First, to standardize PTSD across the three surveys, reported reactions were based only on the worst trauma event. This approach may slightly overestimate lifetime prevalence, but it provides a very similar prevalence estimate[20] based on reactions to both worst event and random event exposure, in cases of more than one traumatic event. Second, for Latinos, the CIDI-PTSD performs well identifying PTSD negative cases (negative predictive value of 98.8% [21]). However, when blinding clinician and respondent to previous answers on the CIDI and when asking about the same traumatic events in the Structured Clinical Interview (SCID), the CIDI for Latinos does not always identify the same PTSD positive cases (within the same individual) as the SCID. This pattern of denying previously reported traumatic events in a diagnostic re-interview has been observed in less acculturated immigrant and refugee populations, as a result of greater dissociative reactions to trauma.[22] The CIDI-PTSD module has demonstrated fair to moderate concordance with the SCID (AUC = 0.6–0.7)[23] and the Clinical Calibration study (AUC = 0.7–0.8).[24] We contend that the CIDI provides a reasonable method for comparing populations[25] in their probable risk of PTSD.

Factors Associated with the Traumatic Event—For each reported PTE, respondents were asked about the number of occurrences. The CIDI-PTSD assessment of lifetime occurrence of PTEs contains 27 items, including: 1) interpersonal violence (e.g., combat, rape, child abuse, residence in war zone); 2) other threats to the physical well-being of respondent (e.g., exposure to disaster, life-threatening illness/accident); 3) threats to the physical well-being of others (e.g., witness to violence, torture) and ; 4) open-ended questions (e.g., private events which respondent does not wish to discuss). The frequency of exposure for each of 11 types of PTEs in Table 2 were tallied and further coded into 0 (if the particular type of PTE was not reported), 1 or 2 or more. We also analyzed the number of PTEs as a continuous measure.

Sociodemographic Factors—Race and ethnicity were obtained through self-report using U.S. Census categories: non-Latino white (reference in multivariate analyses because it is the largest), African American, Latino, Asian and Afro-Caribbean. Mixed race was 6%, so we assigned those cases to their self-selected primary category unless one of the designations was Latino, in which case we followed Census rules for assigning to the Latino category independent of race. A dummy variable was used to code for nativity (immigrant as reference). Age was coded using four categories. Gender was coded using a dummy variable (with male as reference). Marital status was classified as never married, or widowed/divorced/separated (married as reference). Education was based on number of years, and employment status was coded using three categories (employed as reference; unemployed and out of the labor force). Poverty level was based on the U.S. Census designation with above poverty level as reference. Region was determined based on state of residence and coded into four categories using U.S. Bureau of Labor criteria. Urbanicity was coded using county density (metro counties as reference).

Clinical Factors—PTSD risk increases if the respondent has other psychiatric disorders, so lifetime assessment of affective and/or substance use disorders were obtained from the CIDI. Retrospective dates of onset distinguished childhood (≤ 18 years) from adult onset of disorders.

Social Support Factors—We measured family and friend support using items selected from the Family and Friend Support Scales (α=0.58 and 0.69, respectively). Sample[26] questions measure the frequency of talking on the phone or getting together with family or relatives, degree of reliance on relatives or friends for help, and discussion of worries. Both scales were transformed to range from 0–1 with higher scores indicating greater support.

Statistical Analyses

To tackle aim 1, we first tested whether there were differences in sociodemographic, clinical and social support factors as well as in adjusted rates of probable PTSD across the ethnic/racial groups. Significance tests for group differences in all described analyses were conducted using Rao–Scott statistics for the Pearson chi-squared test for survey studies,[27,28] We used an α-level of .05 for all statistical analyses, but adjusted for multiple comparisons using Benjamini-Hochberg methods.[29] We then evaluated whether there were differences in the exposure to PTEs (aim 2), after adjusting for age, gender and education differences by weighting the sample to make the ethnic/racial groups the same in age, gender, and education distributions. We proceeded to assess whether there was differential symptom endorsement of the worst event across ethnic/racial groups, using the same adjustments. The last statistical model addressing our third aim was a logistic regression fitting the log odds of a lifetime CIDI diagnosis of PTSD as a function of ethnic/racial group (Model 1) and then estimating if the differences remained after adjusting for sociodemographic, clinical and social support factors (Model 2). We adjusted for the type and frequency of traumatic events (Model 3), and for differential symptom endorsement by eliminating one criterion at a time from the diagnostic algorithm to appraise whether this would eliminate PTSD conditional risk differences. All descriptive and model-based analyses were conducted with STATA 10.1 statistical software[28] using survey analysis methods to incorporate sampling weights[19] and account for the complex survey design.

RESULTS

Differences in Sociodemographic, Clinical and Social Support Factors and in PTSD Prevalence

Table 1 shows that the racial/ethnic groups differ in many ways that might be associated with PTSD risk, including sociodemographic, clinical and social support factors. For example, Latinos, Asians and Afro-Caribbeans are more likely to be immigrants, while non-Latino whites are more likely to be above the poverty line. At the bottom of Table 1, we report the adjusted lifetime prevalence of probable PTSD. Most strikingly only 1.9% of Asians report lifetime PTSD, in contrast to 7.8% of African Americans, 6.9% of non-Latino whites, 6.3% of Afro-Caribbeans, and 4.6% of Latinos. The overall adjusted population estimate (6.4%) is similar to the overall lifetime PTSD prevalence reported for the NCS-R.[22] After we adjusted for age, gender, and education, the 12-month prevalence of probable PTSD is lower for Asians (1.1%) than for all other groups and higher for African American, Afro-Caribbeans and non-Latino whites.

Types of Traumatic Exposures after Adjustments

We next examined the proportions of persons in each ethnic/racial group who reported PTEs in 11 discrete categories, as well as a global category of any trauma (Table 2). Fewer Asian reported any PTEs (70.6%) than non-Latino whites (84.1%), African Americans (84.0%), Afro-Caribbeans (83.5%) or Latinos (79.1%), after age, gender, and education adjustment. Latinos also reported significantly lower exposure (79.1%) than non-Latino whites. In contrast, African Americans and Afro-Caribbeans were similar to the non-Latino whites (84.0% and 83.5% respectively).

The pattern was complicated when the specific traumas were considered. Larger proportions of Asians reported exposure to political violence than any of the other ethnic/racial groups. Although African Americans and Afro-Caribbeans had similar rates of exposure to any trauma as non-Latino whites, they reported significantly higher rates of exposure to personal violence. Similarly, African Americans were more likely to have witnessed violence than non-Latino whites, Latinos and Asians.

PTSD Diagnostic Criteria in Reaction to Worst Event

To determine if the differences in prevalence were due to differences in types of traumatic exposure, we examined the proportion of persons with reported trauma exposure who met criteria for PTSD criteria other than A, Part 1 (exposure). These adjusted proportions are displayed in Table 3. Compared to all other groups, Asians were less likely to meet all criteria for PTSD except for an intense response to the worst trauma endorsed (Criterion A, Part 2). Latino participants were less likely than non-Latino whites to report PTSD symptoms that extended beyond one month (Criterion E). African Americans and Afro-Caribbeans were more likely than all other groups to meet all criteria, with the exception that Afro-Caribbeans were similar to non-Latino whites and Latinos in rates of dysfunction reported following traumatic exposure (Table 3, Criterion F).

Because reactivity to traumatic exposure may depend upon type of event experienced, we examined rates of criteria endorsement stratified on trauma types (data available from authors). Criterion A, Part 2 was the only criterion consistently observed to be higher in African Americans compared to non-Latino whites in almost all prevalent trauma types examined.

Group Comparisons after Adjustments for Differences

The baseline model of Table 4 (Model 1) shows that Latinos (OR=0.67, 95% CI=0.52–0.86) and Asians (OR=0.28, 95% CI=0.17–0.47) have lower odds of a lifetime probable PTSD while African Americans have higher odds (OR=1.33, 95% CI=1.07–1.64) than non-Latino whites. The reduced odds observed for Asians persist after adjusting for sociodemographic, clinical and social support factors identified as risk or protective factors[30] (Model 2) and also factors associated with the number and frequency of traumatic events (Model 3; OR= 0.54, 95% CI=0.30–0.96). Rather than reducing the risk differential for African Americans, adjustment for sociodemographic, clinical and social support factors increase the difference between African Americans and non-Latino whites relative to the baseline model (Model 2; OR=1.71, 95% CI=1.32, 2.21). Once we adjust for event type and frequency, it slightly reduces the differences but African Americans still remain significantly higher (Model 3; OR=1.50, 95% CI=1.13–1.99). In sensitivity analyses, we used a continuous variable for frequency of PTEs and found the same results (data available from authors). In addition, we used logistic regression models where we took out one criteria at a time (A2, B, C, D, E and F) from the diagnostic algorithms to evaluate whether differential symptoms endorsement could account for ethnic/racial differences in PTSD risk (data not shown), and found that it did not explain the higher conditional PTSD risk for African Americans or the lower risk for Asians as compared to non-Latino whites. An identical pattern of results was obtained using an alternate analysis in which time to the first documented episode of PTSD (using retrospective reports of age of PTSD onset) was the outcome and covariates were entered into a Cox proportional hazards model (OR=0.50, 95% CI=0.32, 0.80 for Asian and OR=1.29, 95% CI=1.04, 1.60 for African American; data not shown).

DISCUSSION

In a nationally representative survey, we found that African Americans have higher, while Asians and Latinos have lower prevalence rates of probable lifetime PTSD, as compared to non-Latino whites. These differences remain for Asians and African Americans after adjustment for sociodemographic, clinical and social support factors. Results are consistent with Roberts and colleagues[5] using a different data set, different diagnostic measures and an expanded set of covariates. Agreement across these studies with different instruments might be due to both studies using DSM-IV criteria for establishing probable PTSD in large national studies that considered similar adjustment factors.

Higher conditional risk of probable lifetime PTSD among African Americans and lower risk for Asians does not appear associated with differential reaction to traumatic events. Although certain PTE classes (e.g., combat) were more common among African Americans, adjusting for these differences did not eliminate their higher rates of probable PTSD. This finding is inconsistent with some findings of studies of combatants[31] that finds higher PTSD rates for Latinos. This inconsistency might be explained by changes in the social and economic composition of volunteer forces, where determinants of enlistment are associated with accumulated social and economic disadvantage – particularly for Latinos.[32] Greater cumulative exposure to trauma and disadvantage for minority enlistees rather than in the general Latino population might disproportionably put them at risk for PTSD in subsequent combat-linked events.

Political violence was more frequently reported by Latinos and Asians as compared to non-Latino whites. Yet, these same groups report lower rates of probable PTSD compared with non-Latino whites. This is surprising given the documented association of political violence with PTSD among immigrants.[33] This could be linked to political violence being overrepresented among political dissidents, who are typically altruistic,[34] may anticipate violence, and prepare for it psychologically. In addition, we did not find a higher overall rate of probable PTSD for Latinos, as previously reported.[35] Because the NLAAS is weighted to represent the U.S. Latino non-institutionalized population, which is overwhelmingly Mexican, our findings may differ from previous studies that included predominantly Caribbean Latinos for which high rates of PTSD have been repeatedly documented.[35–37]

While statistical adjustments for type of traumatic event and frequency help us identify what might be associated with higher conditional risk of PTSD, the interpretation of traumatic experiences may be quite diverse in different ethnic/racial groups.[38,39] Our analysis suggests that there are important questions about potential mechanisms for PTSD risk among racial/ethnic minorities that cannot be answered by our data. These mechanisms may involve environmental risk exposure (e.g., living in unsafe environments) or repeated discriminatory experiences[40] and racial stigmatization[5] that may predispose certain groups to neuroendocrine alterations and increase their PTSD risk.[40] Both greater exposure to discrimination[41] and unsafe environments are more likely observed for African Americans than non-Latino whites, but the absence of these data in our three studies preclude us from testing this hypothesis.

In contrast to findings for African Americans, Asians reported lower probable PTSD prevalence and less likelihood of endorsing all criteria except Criterion A2 (intense fear, helplessness or horror) for traumatic exposure. This is significant since occurrence of A2 symptoms is considered an indication of PTE severity and a predictor of future PTSD. Notably, our Asian sample consisted of more individuals with higher education,[42] which may contribute to different results from regional studies.[43] Although we adjusted for education, greater coping skills offered by education may facilitate better adjustments after

traumatic events.[44] Differences in disclosure of trauma in Asians may also explain these findings. Kinzie and colleagues[22] reported difficulties diagnosing PTSD among Southeast Asian refugees, with only 46% of cases previously diagnosed being concordant with a diagnostic re-interview. The diagnostic criteria for PTSD may not fully capture how less acculturated Asian groups express reactions to traumatic exposures,[36,45] or whether they experience greater dissociative reactions to trauma leading them to prospectively deny such events. Depressive symptoms that are highly comorbid with PTSD or somatization may also mask the presence of PTSD in Asians. Other reports[46] call attention to the potential under detection of PTSD in Latinos given their likelihood to somatize and withhold information. In survey studies, the possibility of response bias in psychopathology assessments must be considered. Yet, one recent study[47] of the PTSD Checklist-Civilian Version finds no differential item functioning for Spanish compared to English speakers; however, there has not been similar testing for Asian populations. The capacity of structured instruments like the CIDI to reliably reach accurate psychiatric diagnoses in some cultural groups requires further examination.[48–50]

Study Limitations

We were unable to examine variations in probable PTSD across sub-ethnic/racial categories (e.g., Vietnamese), because of limited sample size. Also, probable PTSD rates for African Americans could be even higher if the studies included incarcerated populations, which are disproportionately African American and Latino and known to have high rates of PTSD.[50] Another important caveat is that results for both Afro-Caribbeans and Asians are limited by relatively small sample sizes. Subsequent studies of PTSD risk across racial/ethnic groups need to illuminate whether response bias can explain differential risk for PTSD.[37]

Clinical Implications

Although lifetime prevalence estimates are subject to methodological shortcomings, these data provide a useful measure of risk for probable PTSD with respect to the worst traumatic event, as they are more likely to be recalled than other life stressors.[1] Patterns of results may be specific to the structured interview used; yet our results are similar to Roberts',[5] the only other available national study.

Clinicians should thoroughly screen for trauma exposure across ethnic/racial minorities and factors that might exacerbate risk for PTSD. This includes individual characteristics (i.e., out of the workforce), types of trauma (i.e., combat, victimization, personal assault, loss, illness) and likelihood of a lifetime affective or substance use disorder. Clinicians should also consider the different resources for addressing trauma consequences (i.e., available support). Without exploration of the patient's interpretation of how traumatic experiences have affected him/her and the expectations about help after traumatic exposure, it might be difficult to understand differential risk for PTSD across ethnic/racial groups.

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Table 1

Distribution of Sociodemographic, Clinical, and Social Support Variables, and Adjusted Prevalence Rates Across Racial/Ethnic Groups in a US Sample

	Non-Latino White		Latino			Asian				African American					Afro-Caribbean						Total	
	n =5071		*n* =3264			*n* =2178				*n* =4249					*n* =1476						*N* =16238	
Variables	**%**	**SE**	**%**	**SE**	**vs. W[3]**	**%**	**SE**	**vs. W[3]**	**vs. L[4]**	**%**	**SE**	**vs. W[3]**	**vs. L[4]**	**vs. A[5]**	**%**	**SE**	**vs. W[3]**	**vs. L[4]**	**vs. A[5]**	**vs. AA[6]**	**%**	**SE**
Born in US					***			***	***				***	***			***	***	*	***		
US-born	96.6	0.5	48.6	2.13		22.8	3.0			97.7	0.3				32.6	2.9					87.2	0.9
Immigrant	3.4	0.5	51.4	2.13		77.2	3.0			2.3	0.3				67.4	2.9					12.8	0.9
Age Category					***			***	**			***	***				***					
18–34 years	27.8	1.3	48.5	1.51		39.6	1.6			36.3	1.3				40.7	1.7					31.8	1.0
35–49 years	30.7	1.1	30.4	1.04		32.6	1.7			33.6	0.8				31.5	1.4					31.1	0.8
50–65 years	22.8	1.2	13.4	0.81		17.9	1.2			18.6	0.9				17.0	1.3					21.0	0.9
65+ years	18.7	1.1	7.7	0.84		9.9	1.6			11.6	0.7				10.8	2.4					16.2	0.8
Gender					*				*			**	***	*								
Male	47.4	1.0	51.8	1.52		47.4	1.1			43.9	0.8				49.7	2.9					47.6	0.8
Female	52.6	1.0	48.2	1.52		52.6	1.1			56.1	0.8				50.3	2.9					52.4	0.8
Marital					***			***	***			***	***	***			***	***	***	*		
Married	54.3	1.4	51.1	1.6		65.3	1.9			32.1	1.1				37.4	2.6					51.9	1.1
Never Married	22.4	1.4	30.6	1.3		25.2	1.4			38.4	1.3				39.1	2.1					25.3	1.1
Widowed/Divorced/Separated	23.4	0.8	18.3	1.1		9.5	1.0			29.6	0.8				23.5	1.6					22.8	0.6
Education					***			***	***			***	***	***			*	***	***	***		
11 years or less	13.2	1.0	42.6	1.7		14.7	1.4			24.0	1.1				20.1	1.8					18.0	0.8
12 years	31.4	1.4	27.4	1.1		17.3	1.2			37.9	1.0				30.4	1.9					31.0	1.0
13 – 15 years	28.6	1.0	19.8	1.1		25.3	1.4			24.3	0.9				27.3	3.3					27.0	0.7
16 years or more	26.8	1.4	10.2	0.9		42.7	2.0			13.9	1.0				22.2	1.4					24.1	1.0
Employment					**							***		***			***	***	***	***		
Employed	66.0	1.0	64.2	1.7		65.0	1.4			65.9	1.0				76.0	1.5					65.8	0.7
Unemployed	5.0	0.5	7.9	0.9		6.0	0.6			9.1	0.6				8.0	1.0					5.8	0.4
Out of labor force	29.0	1.0	27.9	1.6		29.1	1.5			25.0	1.0				16.0	1.7					28.4	0.7
Region					***			***	***			***	***	***			***	***	***	***		
Northeast	21.4	3.7	15.5	1.3		15.3	3.4			15.8	0.9				56.9	5.3					20.1	2.7

	Non-Latino White		Latino			Asian				African American					Afro-Caribbean						Total	
	n =5071		*n* =3264			*n* =2178				*n* =4249					*n* =1476						*N* =16238	
Variables	**%**	**SE**	**%**	**SE**	**vs. W[3]**	**%**	**SE**	**vs. W[3]**	**vs. L[4]**	**%**	**SE**	**vs. W[3]**	**vs. L[4]**	**vs. A[5]**	**%**	**SE**	**vs. W[3]**	**vs. L[4]**	**vs. A[5]**	**vs. AA[6]**	**%**	**SE**
Midwest	26.5	2.3	9.1	1.7		8.8	1.9			18.6	1.7				4.2	1.1					22.6	1.6
South	32.8	2.9	31.9	3.8		8.6	1.8			56.4	2.1				31.2	5.1					34.1	2.1
West	19.3	2.6	43.5	3.6		67.3	4.1			9.1	0.8				7.8	1.9					23.2	1.9
Poverty					***			***	***			***		***			***	***		***		
Above poverty	90.8	0.6		1.8		82.8	1.2			75.8	1.2				85.6	1.5					86.8	0.6
Below poverty	9.2	0.6	25.9	1.8		17.2	1.2			24.2	1.2				14.4	1.5					13.2	0.6
Urbanicity					**			***				*		**			***	***	***	***		
Non-metro counties	25.8	6.5	8.1	3.6		3.4	1.6			12.5	2.4				0.0	.					21.1	5.0
Metro counties	74.2	6.5	91.9	3.6		96.6	1.6			87.5	2.4				100.0	.					78.9	5.0
Other Lifetime dx																						
Affective dx	21.1	0.8	15.5	0.6	***	9.9	1.0	***	***	12.3	0.6	***	***	*	13.9	2.2	**				18.9	0.6
Substance dx	14.8	0.7	12.4	1.2		4.2	0.6	***	***	11.4	0.6	***		***	8.9	2.5			*		13.6	0.5
Childhood onset dx[‡]																						
Affective dx	7.9	0.4	6.3	0.6	*	3.9	0.6	***	**	4.0	0.3	***	***		7.3	1.6			*	*	7.1	0.3
Substance dx	7.7	0.5	5.8	0.7	*	2.3	0.5	***	***	4.2	0.4	***	*	**	6.3	2.4			*		6.8	0.4
Family Support																						
Mean(SE)	0.69	0.0	0.65	0.0	***	0.59	0.0	***	***	0.66	0.0	***		***	0.65	0.0	***		***		0.68	0.0
Friend Support																						
Mean(SE)	0.69	0.0	0.54	0.0	***	0.57	0.0	***	*	0.65	0.0	***	***	***	0.67	0.0		***	***		0.66	0.0
Adjusted PTSD[1,2]																						
Lifetime prevalence- worst event	6.9	0.5	4.6	0.6	*	1.9	0.5	***	**	7.8	0.5		***	***	6.3	1.1			***		6.4	0.4
12-month prevalence-worst event	2.8	0.3	2.5	0.4		1.1	0.4	*	*	3.1	0.3		**	***	3.1	0.9			**		2.7	0.2

* $p < .05$,

** $p < .01$,

*** $p < .001$ indicate race/ethnic group difference

‡ onset at age 18 or prior

[1] Applied Benjamini-Hochberg adjustment to control for inflated type 1 error

[2] Adjusted for age, gender, and education by weighting each group to represent the age,

[3] Non-Latino White,

[4] Latino,

[5] Asian,

[6] African American

Table 2

Proportions of Persons Who Reported Potentially Traumatic Events in 11 Discrete Categories, and a Global Category of any Trauma by Race/Ethnicity in a US Sample

(Age, gender, and education adjusted weight; with Benjamini-Hochberg multiple comparisons adjustment)[1]

	Non-Latino White		Latino			Asian				African American					Afro-Caribbean						Total	
	n =5071		*n* =3264			*n* =2178				*n* =4249					*n* =1476						*N* =16238	
	%	SE	%	SE	vs. W[6]	%	SE	vs. W[6]	vs. L[7]	%	SE	vs. W[6]	vs. L[7]	vs. A[8]	%	SE	vs. W[6]	vs. L[7]	vs. A[8]	vs. AA[9]	%	SE
Any Trauma	84.1	1.06	79.1	1.68	**	70.6	1.60	***	***	84.0	0.98		**	***	83.5	1.88			***		82.8	0.86
Combat	5.6	0.56	4.0	0.58		6.2	0.74			8.9	0.56	***	***		6.0	2.22					5.8	0.42
Other Political Violence	11.3	0.54	15.8	0.98	***	24.8	1.51	***	***	10.8	0.70		***	***	13.7	1.73			***		12.5	0.41
Victimization[2]	27.5	1.34	29.3	1.76		16.1	1.15	***	***	29.1	1.22			***	27.1	3.08			***		27.4	1.01
Personal Violence[3]	22.4	0.91	26.2	1.46		14.0	1.04	***	***	29.3	1.30	***		***	30.3	1.78	***		***		23.3	0.68
Other Personal Assault[4]	7.9	0.62	6.1	0.65		6.9	0.95			8.0	0.58				7.4	1.14					7.6	0.46
Loss	47.7	1.39	38.7	1.31	***	26.4	1.33	***	***	51.9	1.23		***	***	47.0	3.38			***		46.0	1.04
Witness Violence	36.9	1.02	37.9	1.68		27.8	1.64	***	***	44.0	1.20	***	**	***	40.2	2.36			***		37.5	0.80
Accident	27.1	1.09	24.4	1.20		16.4	1.26	***	***	23.5	0.75	*		***	21.4	2.72					25.8	0.85
Disaster	22.1	1.18	23.9	1.35		20.9	1.54			19.6	1.21		*		28.8	1.44	***		***	***	22.0	0.88
Illness	26.1	0.90	18.3	1.35	***	11.9	0.79	***	***	20.6	0.81	***		***	17.6	2.60	*		*		23.8	0.67
Other Traumas[5]	13.6	0.82	11.8	0.89		8.5	1.18	**		11.9	0.58				13.3	1.62			*		12.9	0.60

*p<.05,

**p<.01,

***p<.001 Indicate minority race/ethnic group different from non-Latino white reference group

[1]Adjusted for age, gender, and education by weighting each group to represent the age, gender, education distribution of the 2000 census

[2]Victimization: Includes child physical and/or sexual abuse; rape, domestic partner abuse; sexual molestation/assault (other than rape)

[3]Personal Violence: Includes purposely, or accidentally, causing injury or death to another; torturing or killing another; physical assault by another (not including domestic violence)

[4]Other Personal Assault: Includes mugging, held-up or threatened; kidnapped, held captive; or exposure to man-made disaster

[5]Other Traumas: Include other traumatic exposure not otherwise assessed (e.g., private events which respondent does not wish to discuss)

[6]Non-Latino White,

[7] Latino,

[8] Asian,

[9] African American

Table 3

PTSD Diagnostic Criteria Associated with Worst Event by Race/Ethnicity Among Those Exposed to Any Trauma in a US Sample

(Adjusted for age, gender, and education; with Bejamini-Hochberg multiple comparisons adjustment)

	Non-Latino White			Latino				Asian					African American						Afro-Caribbean							Total		
	n = 3654			*n* = 2611				*n* = 1588					*n* =3447						*n* =1173							*N* =12473		
Criteria	**n**	**%**	**SE**	**n**	**%**	**SE**	**vs W[1]**	**n**	**%**	**SE**	**vs W[1]**	**vs L[2]**	**n**	**%**	**SE**	**vs W[1]**	**vs L[2]**	**vs A[3]**	**n**	**%**	**SE**	**vs W[1]**	**vs L[2]**	**vs A[3]**	**vs AA[4]**	**n**	**%**	**SE**
Criteria A Part 1: Trauma Exposed	3654	100.0	0.00	2611	100.0	0.00		1588	100.0	0.00			3447	100.0	0.00				1173	100.0	0.00					12473	100.0	0.00
Criteria A Part 2: Intense fear, helplessness, or horror	1105	28.1	1.20	714	27.2	1.53		376	24.7	1.39			1344	37.3	0.84	***	***	***	451	36.9	2.08	***	***	***		3990	29.0	0.87
Criteria B: Re-experiencing of event, recurrent recollections and distress	619	12.7	0.62	373	12.5	1.13		92	6.5	0.84	***	***	955	24.6	0.85	***	***	***	336	27.4	1.56	***	***	***		2375	13.9	0.47
Criteria C: Persistent avoidance of stimuli associated with trauma and numbing of general responsiveness	603	12.2	0.67	342	11.5	1.19		94	6.4	0.76	***	***	851	21.7	0.73	***	***	***	269	21.4	1.87	***	***	***		2159	13.0	0.50
Criteria D: Persistent Hyperarousal	602	12.2	0.59	329	10.9	1.13		87	6.1	0.94	***	***	845	21.6	0.76	***	***	***	270	22.6	1.64	***	***	***		2133	13.0	0.46
Criteria E: Symptoms > 1 Month	552	11.2	0.61	284	9.0	0.77	*	65	4.1	0.71	***	***	704	18.2	0.75	***	***	***	219	18.7	1.50	***	***	***		1824	11.5	0.45
Criteria F: Cause clinically significant distress or impairment in areas of functioning	530	11.0	0.61	266	8.7	1.00		65	4.7	0.77	***	***	554	13.6	0.71	*	***	***	151	12.0	1.89			***		1566	10.8	0.48

* $p < .05$,

** $p < .01$,

*** $p < .001$ indicate minority race/ethnic group different from non-Latino White reference group

[1] Non-Latino White,

[2] Latino,

[3] Asian,

[4] African American

Table 4

Relation of Probable PTSD to Race/Ethnicity (Model 1), with Adjustments for Demographic, Clinical, and Social Support Variables (Model 2), and for Additional Adjustments for Type and Frequency of Traumatic Events (Model 3) in Logistic Regression Models in a US Sample

	Lifetime PTSD vs. no lifetime PTSD					
	N =16238					
	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Race/Ethnicity						
Non-Latino White	1		1		1	
Latino	0.67	(0.52 – 0.86)**	0.79	(0.59 – 1.07)	0.76	(0.54 – 1.07)
Asian	0.28	(0.17 – 0.47)***	0.45	(0.27 – 0.77)**	0.54	(0.30 – 0.96)*
African American	1.33	(1.07 – 1.64)**	1.71	(1.32 – 2.21)***	1.5	(1.13 – 1.99)**
Afro-Caribbean	1	(0.64 – 1.57)	1.45	(0.81 – 2.59)	1.26	(0.65 – 2.44)
Nativity						
US-born			1		1	
Immigrant			0.7	(0.52 – 0.94)*	0.87	(0.61 – 1.24)
Age Category						
18–34 years			1		1	
35–49 years			0.95	(0.71 – 1.28)	0.93	(0.69 – 1.27)
50–65 years			0.92	(0.71 – 1.20)	0.88	(0.66 – 1.17)
65+ years			0.22	(0.14 – 0.35)***	0.28	(0.17 – 0.47)***
Gender						
Male			1		1	
Female			2.88	(2.43 – 3.43)***	2.46	(1.94 – 3.12)***
Marital						
Married			1		1	
Never Married			0.86	(0.61 – 1.20)	1	(0.71 – 1.39)
Widowed/Divorced/Separated			1.6	(1.26 – 2.05)***	1.38	(1.09 – 1.75)**
Education						
11 years or less			1		1	
12 years			0.69	(0.55 – 0.88)**	0.68	(0.54 – 0.86)**
13 – 15 years			0.84	(0.67 – 1.06)	0.79	(0.62 – 1.02)
16 years or more			0.97	(0.71 – 1.32)	1	(0.76 – 1.32)
Employment						
Employed			1		1	
Unemployed			0.75	(0.53 – 1.05)	0.72	(0.50 – 1.02)
Out of labor force			1.49	(1.22 – 1.81)***	1.44	(1.17 – 1.76)***
Region						
Northeast			1		1	

	Lifetime PTSD vs. no lifetime PTSD					
	N =16238					
	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Midwest			0.86	(0.56 – 1.34)	1.02	(0.69 – 1.52)
South			0.81	(0.59 – 1.12)	1.01	(0.79 – 1.29)
West			0.85	(0.61 – 1.17)	0.94	(0.70 – 1.25)
Poverty						
Above poverty			1		1	
Below poverty			1.07	(0.84 – 1.37)	1.04	(0.83 – 1.30)
Urbanicity						
Non-metro counties			1		1	
Metro counties			0.89	(0.71 –1.11)	0.85	(0.70 – 1.04)
Lifetime affective dx						
Negative			1		1	
Positive			3.51	(2.51 – 4.92)***	2.71	(1.87 – 3.91)***
Lifetime substance dx						
Negative			1		1	
Positive			2.41	(1.80 – 3.24)***	1.78	(1.33 – 2.37)***
Childhood onset affective dx						
Negative			1		1	
Positive			1.64	(1.20 – 2.26)**	1.41	(1.01 – 1.96)*
Childhood onset substance dx						
Negative			1		1	
Positive			1.01	(0.67 – 1.52)	1.05	(0.73 – 1.53)
Family support scale						
Continuous measure			0.53	(0.39 – 0.72)***	0.77	(0.55 – 1.10)
Friend support scale						
Continuous measure			0.79	(0.55 – 1.12)	0.78	(0.55 – 1.09)
Combat						
0					1	
1					2.25	(1.16 – 4.37)*
2 or more than 2					2.43	(1.24 – 4.79)*
Other Political Violence						
0					1	
1					0.79	(0.49 – 1.26)
2 or more than 2					0.97	(0.70 – 1.34)
Victimization						
0					1	
1					1.82	(1.22 – 2.72)**
2 or more than 2					3.52	(2.79 – 4.44)***

	Lifetime PTSD vs. no lifetime PTSD					
	N =16238					
	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Personal Violence						
0					1	
1					1.74	(1.27 – 2.37)***
2 or more than 2					1.27	(0.99 – 1.63)
Other Personal Assault						
0					1	
1					1.06	(0.64 – 1.77)
2 or more than 2					1.46	(0.70 – 3.03)
Loss						
0					1	
1					1.52	(1.11 – 2.07)**
2 or more than 2					1.45	(1.13 – 1.85)**
Witness Violence						
0					1	
1					1.38	(1.02 – 1.86)*
2 or more than 2					1.18	(0.91 – 1.52)
Accident						
0					1	
1					1	(0.74 – 1.35)
2 or more than 2					1.23	(0.96 – 1.57)
Disaster						
0					1	
1					0.99	(0.59 – 1.64)
2 or more than 2					0.73	(0.53 – 0.99)*
Illness						
0					1	
1					1.14	(0.92 – 1.42)
2 or more than 2					1.68	(1.23 – 2.30)**
Other						
0					1	
1					2.19	(1.76 – 2.73)***
2 or more than 2					2.2	(1.37 – 3.53)**

Note: PTSD = Posttraumatic Stress Disorder

* $p < .05$,

** $p < .01$,

*** $p < .001$