Published in final edited form as:

Violence Against Women. 2016 August ; 22(9): 1055–1074. doi:10.1177/1077801215617553.

TRAUMATIC EVENTS ASSOCIATED WITH POSTTRAUMATIC STRESS DISORDER: THE ROLE OF RACE/ETHNICITY AND DEPRESSION

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Abstract

This study sought to examine specific types of potentially traumatic experiences as predictors of posttraumatic stress disorder (PTSD) and the moderating effect of race/ethnicity and major depressive disorder (MDD) among non-Hispanic White, non-Hispanic Black, and Hispanic U.S. women. The study sample was drawn from two waves of the National Epidemiologic Surveys of Alcohol and Related Conditions. Sexual assault, intimate partner violence, and childhood trauma were the strongest predictors of PTSD compared to the reference group (indirect/witnessed trauma). Similar patterns were revealed across racial/ethnic groups, although the estimates were most robust among White women. Findings also suggest that MDD moderates the effect of traumatic experiences on PTSD.

Keywords

trauma; PTSD; race/ethnicity; depression

INTRODUCTION

Posttraumatic stress disorder (PTSD) has been identified as one of the most important mental health sequelae of a traumatic event and is twice as common among women as men (Brunello et al., 2001; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Childhood maltreatment, sexual assault (SA), and intimate partner violence (IPV) hold the greatest risk of developing PTSD in the U.S. general population (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Moreover, female victims of intentional violence may have higher rates of psychopathology and poorer treatment course than victims of unintended traumatic experiences (Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999; Briere & Jordan, 2004,

2009). These findings may be explained by a higher conditional probability of PTSD-inducing effects of assaultive violence and greater chronicity of PTSD symptoms among those experiencing direct violence and among women overall (Breslau, 2009; Breslau, Davis, Peterson, & Schultz, 1997; Chung & Breslau, 2008).

The prevalence of PTSD among women who have experienced IPV, for example, exceeds that of women in the general population by six-fold (Coker, Weston, Creson, Justice, & Blakeney, 2005; Golding, 1999; Kessler et al., 1995). IPV likely functions as an acute or chronic stressor, as indicated by greater levels of depression as well as PTSD among women with a history of IPV (Coker et al., 2002a; Golding, 1999; Kessler et al., 1995; Lipsky, Field, Caetano, & Larkin, 2005). Further, PTSD has been associated with IPV revictimization among abused women (Iverson et al., 2013). As with IPV, SA may cause long-term negative outcomes, including PTSD (Campbell, Dworkin, & Cabral, 2009; Hedtke et al., 2008; Temple, Weston, Rodriguez, & Marshall, 2007), depression (Burnam et al., 1988; Clum, Calhoun, & Kimerling, 2000), and generalized anxiety (Winfield, George, Swartz, & Blazer, 1990) as well as co-occurring PTSD and depression (Taft, Resick, Watkins, & Panuzio, 2009).

Less is known about how racial and ethnic differences might moderate the relationship between trauma and PTSD. Several studies have revealed a lower prevalence of PTSD among Hispanics and Blacks compared with non-Hispanic Whites (Alegria et al., 2008; Breslau et al., 2006; Breslau et al., 1998; Himle, Baser, Taylor, Campbell, & Jackson, 2009), although findings have been inconsistent and have not been gender-specific for the most part (Alcantara, Casement, & Lewis-Fernandez, 2013; Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010). A recent meta-analysis found consistent support for elevated rates of PTSD onset and severity among Hispanics relative to non-Hispanic Whites (Alcantara et al., 2013). Higher rates of persistent mental disorders once acquired, however, as well as greater severity and functional impairment, have been found among Blacks and to a lesser degree among Hispanics (Alcantara et al., 2013; Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2005; Breslau & Davis, 1992; Himle et al., 2009).

Racial and ethnic differences in PTSD may stem from different rates of exposure to potentially traumatic events overall or by specific types of events, although study findings have been mixed. For example, national survey data suggest that Blacks and Hispanics overall are more likely than White non-Hispanics to witness domestic violence, experience childhood maltreatment, and experience mugging (Roberts et al., 2011). Black respondents in that survey were also more likely to report traumatic IPV, but Hispanic respondents had a lower risk of assaultive violence than White respondents. In the few studies to address women specifically, adolescent and young adult White women appear to be at greater risk for interpersonal violence overall compared to their Black counterparts (Franko et al., 2004; Hirth & Berenson, 2012).

Studies focusing on racial/ethnic differences among women with regard to interpersonal violence and PTSD also have produced varied results (Jacques-Tiura, Tkatch, Abbey, & Wegner, 2010; Lilly & Graham-Bermann, 2009; McFarlane et al., 2005; Temple et al., 2007; Vogel & Marshall, 2001; Wyatt, 1992). Hispanic women IPV victims have been found to be

at greater and lesser risk of PTSD than White or Black women while White women victims may be more likely than their Black counterparts to have PTSD (Lilly & Graham-Bermann, 2009; McFarlane et al., 2005; Temple et al., 2007). There is some evidence to suggest that nonpartner SA is more likely to result in PTSD or a higher frequency of PTSD symptoms among Black women compared to White women (Jacques-Tiura et al., 2010; Temple et al., 2007). It is important to note, however, that most of these studies were comprised of nonrepresentative samples.

Comorbid PTSD and other psychiatric disorders, particularly depression, must also be considered when examining trauma-related risk factors. Comorbidity may be explained by the concept of overlapping disorders or susceptibility to co-occurring distinct diatheses (Breslau, Peterson, & Schultz, 2008). Comorbid PTSD and depression is of major importance given the potential to increase symptom severity and lower global functioning (Shalev et al., 1998) and to contribute to PTSD chronicity (Freedman, Brandes, Peri, & Shalev, 1999). Breslau and colleagues (Breslau, Davis, Peterson, & Schultz, 2000) suggest that the emergence of PTSD might identify a vulnerable subset among those who experience a traumatic event, with depression more likely to occur as a result of pre-existing vulnerabilities exposed and exacerbated by the trauma. For example, Lu et al. (Lu, Mueser, Rosenberg, & Jankowski, 2008) found that childhood adverse experiences overall increased the odds of developing PTSD among adults with severe mood disorders (major depression or bipolar disorder). Further, high levels of negative affectivity have been found to further increase vulnerability to developing assault-related PTSD symptoms among female help-seeking victims of SA (Elklit & Christiansen, 2013). Finally, comorbid PTSD and depression is substantial among women experiencing IPV, with estimates ranging from 25% to 56% (Cascardi, 1999; Lipsky et al., 2005; Pico-Alfonso et al., 2006; Stein & Kennedy, 2001). Nevertheless, the foregoing studies did not address racial/ethnic differences and again, the majority were based on nonrepresentative samples.

Given the lack of consistent evidence with regard to the effect of specific traumatic events on the development of PTSD among women and the role of race/ethnicity and depression in these relationships, the current study aims to address these gaps in the literature with the following objectives: (1) Examine specific types of potentially traumatic experiences (IPV, SA, childhood trauma, other interpersonal trauma, other direct trauma, and indirect/witnessed trauma) as predictors of PTSD; and (2) Examine the moderating effect of race/ethnicity and lifetime major depressive disorder (MDD) among non-Hispanic White, non-Hispanic Black, and Hispanic U.S. women. This study also adds to the literature by utilizing nationally representative data, providing greater generalizability to the female population as a whole. Implications of these findings and suggestions for future research will also be discussed.

MATERIALS AND METHODS

Sampling Methodology

The study sample was drawn from Wave I and II of the National Epidemiologic Surveys on Alcohol and Related Conditions (NESARC). NESARC has been previously described (Grant & Dawson, 2006). In brief, Wave 1 was conducted in 2001–2002 and Wave 2 in

2004–2005; Wave 1 respondents were re-interviewed during the second wave. The sample was weighted to adjust for nonresponse at the household and person levels, the selection of one person per household, and over-sampling of young adults, Hispanics, and Blacks. Once weighted, the data were adjusted to be representative of the U.S. population based on the 2000 Decennial Census. The survey response rate for Wave 1 was 81% and 86.7% for Wave 2; the overall cumulative survey response rate including both waves was 70.2%. The current study included 13,371 women; 8407 non-Hispanic White, 2859 non-Hispanic Black, and 2105 Hispanic women reporting a traumatic event. The small sample size (<5%) of American Indian/Alaska Natives and Asian/Native Hawaiian/Pacific Islanders precluded their inclusion.

Measures

Traumatic Experiences—Traumatic experiences were derived from a series of questions asked in Wave 2 about lifetime ‘extremely stressful events’ (Ruan et al., 2008). Respondents were asked to consider the ‘worst’ event. For the purposes of this study, six categories were created: 1) *IPV* (having been physically attacked/badly beaten up or injured by spouse/partner); 2) *SA* (ever sexually assaulted, molested or raped; experienced unwanted sexual activity); 3) childhood trauma (physical assault or injury or seriously neglected by parents or guardians, witnessed serious fights/beatings among parents/guardians or against siblings); other interpersonal violence (physical assault/injury by anyone else; kidnapped/held hostage; stalked in a way that felt seriously dangerous; mugged/held up/threatened with weapon); other direct trauma (combat/war zone; relief worker; refugee; terrorist attack; serious or life-threatening accident or illness or other event; natural disaster); indirect/witnessed traumatic event (someone close to respondent died/was injured or had serious life-threatening illness/accident or other event; witnessed traumatic event).

Mental Health Disorders—Lifetime PTSD and MDD were defined using the Alcohol Use Disorder and Associated Disability Interview Schedule—DSM-IV Version (AUDADIS-IV) (Grant et al., 2003a; Ruan et al., 2008). Test-retest reliabilities of lifetime diagnoses were good ($Kappa=0.65$) and the internal consistency of symptom scales associated with PTSD and MDD fell within the good range ($alpha=0.69-0.71$) (Grant et al., 2003a; Ruan et al., 2008). The diagnosis of PTSD was made based on the only or ‘worst’ event experienced by the respondent.

Explanatory Factors

Sociodemographic Characteristics—Measures from Wave 2 included self-identified race (non-Hispanic White and non-Hispanic Black) and Hispanic ethnicity; age (in years); education (in years); marital status, health insurance in past year; and total household income in past year. Multiracial respondents were categorized by NESARC according to the following order of preference: (1) Black or African American, (2) American Indian and Alaska Native, (3) Native Hawaiian and Other Pacific Islander, (4) Asian, and (5) White. Nativity and years lived in the U.S. were categorized among Hispanic respondents as having been born in the U.S. or lived in the U.S. for 20 or more years; 10–19 years; 5–9 years; or less than 5 years. U.S. nativity and longer residence in the U.S. have been associated with increased rates of PTSD among Hispanics (Alegria, Canino, Stinson, & Grant, 2006;

Heilemann, Kury, & Lee, 2005; Vega, Sribney, Aguilar-Gaxiola, & Kolody, 2004). Too few Black (<10%) and White (<5%) respondents were born outside of the U.S. to include this variable in the remaining analyses.

Social Support and Social Networks—Social support/networks were assessed at Wave 2 by two instruments. The Interpersonal Support Evaluation List (ISEL12) (Ruan et al., 2008) measures the respondents' perceptions of the current availability to them of potential social resources (e.g., "If I were sick, I know I would find someone to help me with my daily chores"). The Social Network Index (Ruan et al., 2008) assesses participation in 12 types of social relationships with whom the respondent had contact with at least once every two weeks; recoded as number of network types. The test-retest reliability for these instruments was good (ICC= 0.63 and 0.70, respectively) (Ruan et al., 2008).

Data Analysis

Descriptive statistics were used to compare sociodemographic, traumatic events, and PTSD diagnoses by race/ethnicity. Logistic regression was used to estimate the adjusted odds (aOR) and 95% confidence intervals (CI) of PTSD given exposure to each traumatic event category for the total sample and in race/ethnic-specific models. Sociodemographic factors were retained as a block and the remaining individual variables (social support, social networks, nativity/years in the U.S, and MDD) were retained in the model if they were independently associated with the outcome ($p \leq .10$ at entry) or if they confounded the exposure-outcome relationship ($\geq 10\%$ change in exposure-outcome odds ratio) (Maldonado & Greenland, 1993). Effect modification of the exposure-outcome relationship by race/ethnicity and MDD was also examined; stratified analyses by race/ethnicity and MDD were conducted when an interaction term was significant at $p \leq .10$. STATA MP 11 (Stata Corporation, College Station, TX), which accounted for the complex survey design of NESARC, was employed for all analyses.

RESULTS

Sample Description

Significant racial/ethnic differences were revealed in sociodemographic factors and traumatic experiences (Table 1). Of note, Black and Hispanic women were more likely to be younger and to have a lower socioeconomic profile than White women; Black women were less likely to be married than White or Hispanic women. Black and Hispanic women were also more likely to report traumatic IPV and other interpersonal violence. Hispanic women were more likely to report childhood trauma and less likely to report witnessing or indirectly experiencing traumatic events compared to White and Black women. Conversely, White women were more likely to have a MDD diagnosis than Black and Hispanic women; no significant differences between groups were found for PTSD.

Main Effects Models

Table 2 illustrates the main effects estimates for the total sample. Each trauma type significantly predicted PTSD, with SA, IPV, and childhood trauma the strongest predictors of PTSD (aOR 5.76; CI [4.67, 7.10], aOR 4.40; CI [3.20, 6.04], and aOR 3.34; CI [2.53,

4.41], respectively) compared to the reference group (indirect/witnessed trauma). In addition, Black race, young age (20–24 years), previously married, receiving Medicare, and MDD were independently associated with PTSD. Greater social support was protective of PTSD.

Race/ethnicity moderated the trauma-PTSD relationships in three instances (i.e., Black race x other direct trauma [$p=.02$], Hispanic ethnicity x childhood trauma and by IPV [$p=.04$ and $.07$, respectively]). Thus, ethnic specific analyses were undertaken (Table 2). Similar patterns were revealed with a few exceptions. The odds of having a PTSD diagnosis were greater among White than Black or Hispanic women, particularly for SA, IPV, and childhood trauma. On the other hand, only SA, IPV, and childhood trauma predicted PTSD among Black and Hispanic women. Greater social support was again protective in all models, although the estimates in the Hispanic model were marginally significant (upper CIs exceeded 1.00 by 0.10). Nativity/years lived in the U.S. was adjusted for in the Hispanic model, but only having lived <5 years in the U.S. neared significance (OR 0.24; CI [.05, 1.12]).

Stratified Models: Major Depressive Disorder as Moderating Factor

MDD moderated the trauma-PTSD relationships in the total sample and in each race/ethnicity group (MDD x childhood trauma [$p=.01$] and SA [$p<.001$] in the total sample and among Whites; MDD x IPV [$p=.05$] among Blacks; MDD x other interpersonal violence [$p=.01$] and SA [$p=.01$] among Hispanics). Therefore, stratified analyses were undertaken (Tables 3 and 4). The strength of the associations between each trauma type and PTSD were greater among women overall without MDD. For example, in the total sample women reporting SA without MDD were nine times more likely (aOR 9.37; CI [7.15, 12.30]) to have a PTSD diagnosis. In comparison, their counterparts with comorbid MDD were nearly four times more likely (aOR 3.87; CI [2.94, 5.11]) to have PTSD. Although a slight overlap is seen across confidence intervals, women experiencing traumatic IPV without MDD were five times more likely to have a PTSD diagnosis (OR 5.35; CI [3.34, 8.59]), while the odds of having PTSD with comorbid MDD was 3.72 (CI [2.53, 5.47]). Likewise, women reporting childhood trauma without MDD were nearly five times more likely (aOR 4.90; CI [3.38, 7.09]) and women with comorbid MDD were twice as likely (aOR 2.39; CI [1.68, 3.40]) to have PTSD. Greater social support was protective of PTSD among women with and without MDD.

In ethnic-specific models, comparable patterns were revealed in stratified analyses (Tables 3 and 4). Although most confidence intervals overlapped when comparing those with MDD and those without MDD for each traumatic exposure, particularly in the Black and Hispanic models, significantly different estimates were seen for childhood trauma and SA among White women. Among White women without MDD, the risk of PTSD was over six times greater among those with childhood trauma (aOR 6.57, CI [4.17, 10.35]) and more than nine times greater among those with SA (aOR 9.53, CI [6.92, 13.13]). In comparison, the estimates among those with comorbid MDD were less robust (aOR 2.35, CI [1.52, 3.63] and aOR 3.93, CI [2.82, 5.46], respectively). Among Hispanic women with comorbid MDD, it is of interest to note that other interpersonal violence appeared to be protective of PTSD (aOR

0.22, CI [0.07, 0.67]) while IPV did not predict PTSD. Finally, greater social support was protective of PTSD among women with and without MDD only among White women, although the estimate of fair vs. low support was marginally significant among Black women without MDD.

DISCUSSION

The key findings from this study suggest that interpersonal violence, particularly SA, IPV, and childhood trauma, are the strongest predictors of PTSD among women in the U.S. population. Further, the impact of these exposures on PTSD appears to vary by race/ethnicity. More robust effects were revealed among White women, and only SA, IPV, and childhood trauma predicted PTSD among Black and Hispanic women. One of the more novel findings in this study was the more robust estimates for PTSD for each trauma exposure among women without MDD compared to those with comorbid MDD.

The findings in the current study with respect to exposure risks for PTSD support those of prior research (Breslau et al., 1999; Briere & Jordan, 2004, 2009; Roberts et al., 2011). In the study by Roberts et al., (Roberts et al., 2011) using NESARC data, childhood maltreatment, SA, and IPV held the greatest risk of developing PTSD in the general population overall. We do know from previous studies that female victims of intentional violence may have higher rates of psychopathology, including PTSD, than those with unintended traumatic experiences, and that the duration of PTSD symptoms is prolonged among women exposed directly (assaultive violence and injury or shock) (Breslau et al., 1999; Briere & Jordan, 2004, 2009). It is likely, then, that the results of the Roberts study were driven by the female population.

On the other hand, racial/ethnic-specific risks related to PTSD among women have rarely been examined. The present study demonstrated consistent PTSD risk among White, Black, and Hispanic women exposed to SA, IPV, and childhood trauma. Nevertheless, the strength of association varied by race/ethnicity as did risk for PTSD from other exposure types. In the above mentioned study by Roberts et al. (Roberts et al., 2011), racial/ethnic differences in potentially traumatic events and PTSD were revealed, but distinct subgroup risk estimates (i.e., by sex and traumatic event) for PTSD were not reported. Other studies of women, mainly convenience or clinical samples, have focused on interpersonal violence such as SA and IPV. For example, in a sample of women seeking protection orders from their partners, Hispanic women reported significantly higher mean PTSD scores than White or Black women (McFarlane et al., 2005). On the other hand, Temple et al., (Temple et al., 2007), in a convenience sample of self-identified African-American, Euro-American, and Mexican American low income women, found PTSD symptom frequency significantly associated with SA by a current partner. SA by a past partner was significantly associated with PTSD symptoms only among Euro-American women and SA by a non-intimate partner was associated with PTSD symptoms only among African American women.

The role of comorbid MDD in the trauma-PTSD relationship in this study is striking and somewhat unexpected — with the greater effect seen among those women without MDD, particularly among women with childhood trauma and SA histories. Breslau and colleagues

(Breslau, 2009; Breslau et al., 2000) and others (Bromet, Sonnega, & Kessler, 1998; Connor & Davidson, 1997; Curry et al., 2013; Rytwinski, Scur, Feeny, & Youngstrom, 2013) suggest that MDD presents an elevated risk of PTSD, playing an important role in the development of or susceptibility to PTSD once exposed to a traumatic event, or that PTSD renders women more susceptible to co-occurring MDD. The current study, however, did not discern the temporal association between traumatic events and MDD or MDD and PTSD. Nevertheless, women with comorbid MDD had diminished, although still significant, risk for PTSD compared to those without MDD. It appears, then, that the effect of traumatic events on the development of PTSD may be supplanted in part by MDD. Alternatively, the high correlation between these events and MDD may then diminish the effect of the main exposures of interest.

Finally, social support consistently proved to be a protective factor against PTSD in this study among White and, to a lesser extent, Black women. These findings are in line with prior studies of IPV and PTSD (Coker et al., 2002b; Coker, Watkins, Smith, & Brandt, 2003). Social support did not play a role among Hispanic women in the current study, however, particularly in the stratified analyses of MDD. The latter finding is interesting given that other interpersonal trauma was protective against developing PTSD among Hispanic women with MDD. One would expect that social support would have played a role in preventing PTSD for those women exposed to other interpersonal trauma. It is likely that other forms of social support or cultural factors not measured in this study played a more substantial role for Black and Hispanic women. For example, neighborhood disorder and community cohesion stand out in the literature as risk factors for mental health problems, including PTSD, among urban Black residents (Gapen et al., 2011; Johns et al., 2012; Sampson, 2003). Among Hispanics, nativity and years in the U.S. along with other acculturation factors have been suggested to affect mental health, such as parental nativity and age of immigration (Alegria et al., 2006; Heilemann et al., 2005; Vega et al., 2004). In general, greater acculturation or more time spent in the U.S. increases the risk of psychiatric disorders such as PTSD (the “Hispanic paradox”) (Alegria et al., 2008; Breslau, Borges, Hagar, Tancredi, & Gilman, 2009; Ortega, Rosenheck, Alegria, & Desai, 2000). In the present study, nativity/years in the U.S. played a marginally protective role and only among the total sample of Hispanic women. There were insufficient data to include an acculturation measure in the Hispanic models.

LIMITATIONS

There are several limitations to consider in interpreting the findings of this study. First, the measurement of potentially traumatic events is limited by retrospective assessment, which may alter the specific events selected as the “worst event.” Further, the prevalence of PTSD may also be underestimated by retrospective assessment (Kessler et al., 1995; McKinney, Harris, & Caetano, 2009), although individuals with more severe experiences may be more likely to recall negative experiences (Breslau et al., 2008; Kessler, 1997; McKinney et al., 2009; Schraedley, Turner, & Gotlib, 2002). Nevertheless, test-retest reliabilities and the internal consistency of symptom scales of lifetime PTSD as well as MDD diagnoses were good (Grant, Kaplan, Shepard, & Moore, 2003b; Ruan et al., 2008). Second, the temporal association between MDD and traumatic events as well as MDD and PTSD cannot be

determined given the use of lifetime diagnoses in this study. In addition, measurement of social support and social networks were based on current assessments by the respondent at Wave 2, which also precluded an examination of the temporal relationships between these variables and PTSD. Third, although Blacks and Hispanics were oversampled in NESARC, nonsignificant findings may be the result of substantially smaller sample sizes drawn from those populations compared to that of Whites. Finally, a portion of respondents from Wave 1 did not complete Wave 2. It is possible that refusers, the impaired, and deceased were more likely to have DSM-IV disorders, although most studies have revealed modest to no effect (Badawi, Eaton, Myllyluoma, Weimer, & Gallo, 1999; Bergman, Ahlberg, Forsell, & Lundberg, 2010; Caetano, Ramisetty-Mikler, & McGrath, 2003; Torvik, Rognmo, & Tambs, 2012; Van Loon, Tijhuis, Picavet, Surtees, & Ormel, 2003). Moreover, the response rate for Wave 2 (86.7%) was excellent, decreasing the effect of nonresponse on the outcomes under study.

CONCLUSIONS

This study highlights the substantial impact of specific types of potentially traumatic experiences on the development of PTSD on women, especially interpersonal violence, and the variability across race and ethnicity. One of the more novel findings in this study was the effect of comorbidity. Although the majority of potentially traumatic experiences increased risk for PTSD overall, this study revealed greater risk among women without MDD than among those with MDD, suggesting that MDD may in fact ‘absorb’ some of this risk.

These findings suggest that screening and intervention among women for traumatic experiences, particularly interpersonal violence, as well as MDD in physical and mental health and social service settings have the potential to interrupt trajectories that carry higher risk for poor mental health outcomes. Identification of these risks in the milieu of violence and trauma is especially critical in informing the development of relevant and sensitive prevention and intervention programs. For example, the risk of PTSD and subsequent increased alcohol misuse or suicide attempts may be greater among women following assaultive violence (Breslau et al., 1999; Breslau, Davis, & Schultz, 2003; Stevens et al., 2013), pointing to the need for a greater focus on mental disorders and substance abuse prevention following traumatic interpersonal events.

Future research should further investigate the effect of other stressors and protective factors, such as discrimination, neighborhood cohesion, racial/ethnic identity, and acculturation, with the acquisition of a larger sample of ethnic minorities with relevant data. Given the growing evidence with regard to differences in PTSD across Hispanic subgroups (Alegria et al., 2006; Alegria et al., 2008; Breslau et al., 2009; Ortega et al., 2000), it will be important to examine subgroup risk factors among Hispanics as well as other ethnic minority groups.

Acknowledgments

This study was funded by the National Institutes of Health, National Institute of Alcohol Abuse and Alcoholism (NIH/NIAAA) grant R01 AA 018686. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NIH/NIAAA.

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Deborah S. Hasin, PhD, is Professor of Epidemiology at Columbia University Medical Center, where she directs the Substance Dependence Research Group and a NIDA-funded pre- and post-doctoral training program. Dr. Hasin's research interests focus on individual and group-level factors influencing alcohol and drug abuse and its consequences.

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Table 1

Descriptive Characteristics of Female Respondents, National Epidemiologic Survey on Alcohol and Related Conditions, 2004–5.

Characteristic	Total Sample		Non-Hispanic White		Non-Hispanic Black		Hispanic	
	N	% (SE)	N	% (SE)	N	% (SE)	N	% (SE)
Age Group (years) ***								
20–29	2657	15.67 (0.38)	1374	13.91 (0.45)	586	18.79 (0.79)	697	23.62 (1.08)
30–39	3751	17.90 (0.35)	1927	16.16 (0.39)	867	20.80 (0.82)	957	26.02 (1.01)
40–49	4015	21.01 (0.40)	2233	20.61 (0.49)	932	22.18 (0.77)	850	22.30 (0.85)
50–59	3265	17.56 (0.34)	2013	18.37 (0.42)	766	16.84 (0.64)	486	13.18 (0.69)
60–69	2262	11.46 (0.30)	1428	12.27 (0.34)	539	10.53 (0.49)	295	7.22 (0.67)
70	3259	16.40 (0.36)	2333	18.69 (0.44)	571	10.87 (0.55)	355	7.66 (0.70)
Marital Status ***								
Married	8995	57.13 (0.68)	5927	61.25 (0.61)	1179	33.33 (0.91)	1889	56.52 (1.82)
Cohabiting	562	2.94 (0.17)	294	2.53 (0.18)	89	2.48 (0.26)	179	6.09 (0.64)
Separated/widowed/divorced	6250	24.85 (0.42)	3653	24.37 (0.47)	1677	31.94 (0.85)	920	20.21 (1.18)
Never married	3402	15.08 (0.49)	1434	11.85 (0.41)	1316	32.24 (0.90)	652	17.18 (1.09)
Education ***								
< High school	3112	13.79 (0.55)	1181	10.29 (0.37)	779	16.40 (0.88)	1152	33.60 (2.02)
High school diploma	5370	28.30 (0.51)	3197	28.71 (0.57)	1266	29.34 (1.02)	907	24.48 (1.01)
Some college	6138	32.79 (0.54)	3704	33.00 (0.65)	1392	35.07 (0.95)	1042	28.92 (1.38)
Bachelor's degree or higher	4589	25.12 (0.62)	3226	28.00 (0.71)	824	19.18 (0.92)	539	13.00 (1.30)
Household Income (US\$) ***								
<20,000	5307	22.34 (0.57)	2544	19.25 (0.56)	1675	35.65 (1.26)	1088	27.79 (1.47)
20,000–49,999	6921	35.15 (0.54)	3903	33.59 (0.64)	1587	38.24 (0.86)	1431	41.84 (1.41)
50,000–99,999	4968	29.46 (0.55)	3304	31.80 (0.59)	791	20.48 (1.01)	873	24.17 (1.37)
100,000	2013	13.05 (0.53)	1557	15.36 (0.66)	208	5.63 (0.61)	248	6.20 (0.62)
Health Insurance Category ***								
Private insurance	12536	69.62 (0.75)	8350	75.14 (0.58)	2314	54.70 (1.19)	1872	50.25 (1.91)
Medicare	2273	9.75 (0.30)	1174	9.05 (0.34)	709	14.64 (0.63)	390	8.91 (0.93)
Subsidized insurance	1738	7.23 (0.40)	599	4.93 (0.28)	584	13.20 (0.76)	555	15.52 (1.63)

Characteristic	Total Sample			Non-Hispanic White			Non-Hispanic Black			Hispanic		
	N	% (SE)		N	% (SE)		N	% (SE)		N	% (SE)	
No health insurance	2617	13.41 (0.46)		1158	10.88 (0.41)		642	17.46 (1.16)		817	25.31 (1.57)	
Worst Traumatic Event ^{***}												
IPV	417	2.63 (0.17)		218	2.34 (0.20)		115	3.59 (0.43)		84	3.81 (0.46)	
Sexual Assault	915	6.81 (0.30)		575	6.75 (0.33)		192	7.15 (0.70)		148	6.84 (0.77)	
Childhood Trauma	436	3.06 (0.19)		241	2.79 (0.22)		90	3.09 (0.35)		105	5.34 (0.62)	
Other Interpersonal Violence	395	2.53 (0.17)		203	2.20 (0.18)		108	3.35 (0.38)		84	4.31 (0.63)	
Other Direct Trauma	1693	12.07 (0.35)		1058	12.07 (0.41)		354	11.34 (0.74)		281	13.03 (1.12)	
Indirect/Witnessed Trauma	9515	72.90 (0.49)		6112	73.85 (0.57)		2000	71.48 (0.99)		1403	66.67 (1.31)	
Lifetime History of PTSD												
Yes	2528	12.79 (0.35)		1495	12.68 (0.40)		601	13.89 (0.85)		432	12.29 (0.99)	
No	16681	87.21 (0.35)		9813	87.32 (0.40)		3660	86.11 (0.85)		3208	87.71 (0.99)	
Lifetime History of MDD ^{***}												
Yes	5326	27.66 (0.48)		3418	29.08 (0.56)		933	21.78 (0.93)		975	24.90 (1.28)	
No	13883	72.34 (0.48)		7890	70.92 (0.56)		3328	78.22 (0.93)		2665	75.10 (1.28)	

Note.

^{***}

Significant difference between racial/ethnic groups ($p < 0.001$).

IPV = Intimate partner violence. PTSD = Posttraumatic Stress Disorder. MDD = Major Depressive Disorder.

Table 2

Main Effects Models Predicting Lifetime Risk of Posttraumatic Stress Disorder Associated with Specific Traumatic Experiences, by Race/Ethnicity, National Epidemiologic Survey on Alcohol and Related Conditions, 2001–2 and 2004–5.

Risk Factors	Total Sample		Non-Hispanic White		Non-Hispanic Black		Hispanic	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Trauma type								
IPV	4.40	[3.20, 6.04]	5.03	[3.41, 7.41]	3.72	[2.26, 6.14]	2.68	[1.28, 5.58]
Sexual Assault	5.76	[4.67, 7.10]	5.70	[4.42, 7.35]	5.45	[3.45, 8.61]	6.92	[4.09, 11.68]
Childhood Trauma	3.34	[2.53, 4.41]	3.79	[2.68, 5.36]	2.87	[1.68, 4.89]	1.96	[1.16, 3.31]
Other Interpersonal Violence	1.86	[1.37, 2.51]	2.03	[1.40, 2.93]	1.59	[0.90, 2.81]	1.24	[0.48, 3.23]
Other Direct Trauma	1.63	[1.35, 1.97]	1.79	[1.44, 2.23]	1.03	[0.67, 1.59]	1.36	[0.78, 2.39]
Indirect / Witness	Reference		Reference		Reference		Reference	
Race/Ethnicity			...	...	...			
Black	1.23	[1.03, 1.47]						
Hispanic	1.05	[0.85, 1.29]						
White	Reference							
MDD *	3.61	[3.18, 4.10]	3.62	[3.11, 4.20]	3.70	[2.72, 5.02]	3.82	[2.71, 5.39]
Social Support								
High (46–48)	0.70	[0.60, 0.82]	0.69	[0.57, 0.84]	0.74	[0.47, 1.14]	0.67	[0.43, 1.05]
Fair (43–45)	0.74	[0.64, 0.85]	0.73	[0.62, 0.87]	0.72	[0.53, 0.99]	0.72	[0.47, 1.10]
Low (12–42)	Reference		Reference		Reference		Reference	

Note: Ellipsis (...) indicates variable not included in the model.

OR = Odds Ratio, adjusted for all factors with values included as well as age, education, health insurance, household income, and marital status; the Hispanic model is also adjusted for years in US. CI = confidence interval. IPV = Intimate partner violence. MDD = Major Depressive Disorder

* Reference group is no lifetime MDD.

Table 3

Models Predicting Lifetime Risk of Posttraumatic Stress Disorder Associated with Specific Traumatic Experiences among Women with Lifetime Major Depressive Disorder, by Race/Ethnicity, National Epidemiologic Survey on Alcohol and Related Conditions, 2001–2 and 2004–5.

Risk Factors	Total Sample		Non-Hispanic White		Non-Hispanic Black		Hispanic	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Trauma type								
IPV	3.72	[2.53, 5.47]	4.80	[3.04, 7.59]	2.18	[1.12, 4.25]	1.69	[0.61, 4.70]
Sexual Assault	3.87	[2.94, 5.11]	3.93	[2.82, 5.46]	4.13	[2.37, 7.22]	4.17	[2.23, 7.79]
Childhood Trauma	2.39	[1.68, 3.40]	2.35	[1.52, 3.63]	2.44	[1.02, 5.83]	2.46	[1.06, 5.72]
Other Interpersonal Violence	1.58	[1.00, 2.50]	1.83	[1.09, 3.06]	2.14	[0.80, 5.75]	0.22	[0.07, 0.67]
Other Direct Trauma	1.53	[1.17, 2.01]	1.64	[1.21, 2.23]	1.15	[0.53, 2.53]	1.35	[0.55, 3.32]
Indirect / Witness	Reference		Reference		Reference		Reference	
Race/Ethnicity								
			...		...		...	
Black	1.32	[1.02, 1.71]						
Hispanic	1.08	[0.81, 1.44]						
White	Reference							
Social Support								
							...	
High (46–48)	0.67	[0.53, 0.84]	0.66	[0.50, 0.85]	0.71	[0.35, 1.46]		
Fair (43–45)	0.77	[0.64, 0.94]	0.75	[0.60, 0.94]	1.29	[0.72, 2.31]		
Low (12–42)	Reference		Reference		Reference			

Note: Ellipsis (...) indicates variable not included in the model.

OR = Odds Ratio, adjusted for all factors with values included as well as age, education, health insurance, household income, and marital status. CI = confidence interval. IPV = Intimate partner violence.

Table 4

Models Predicting Lifetime Risk of Posttraumatic Stress Disorder Associated with Specific Traumatic Experiences among Women without Lifetime Major Depressive Disorder, by Race/Ethnicity, National Epidemiologic Survey on Alcohol and Related Conditions, 2001–2 and 2004–5.

Risk Factors	Total Sample		Non-Hispanic White		Non-Hispanic Black		Hispanic	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Trauma type								
IPV	5.35	[3.34, 8.59]	5.39	[2.82, 10.29]	5.49	[3.00, 10.04]	4.63	[1.59, 13.47]
Sexual Assault	9.37	[7.15, 12.30]	9.53	[6.92, 13.13]	7.04	[3.63, 13.68]	14.69	[7.05, 30.61]
Childhood Trauma	4.90	[3.38, 7.09]	6.57	[4.17, 10.35]	3.36	[1.69, 6.71]	1.39	[0.56, 3.44]
Other Interpersonal Violence	2.22	[1.45, 3.41]	2.32	[1.34, 4.02]	1.23	[0.56, 2.70]	2.36	[0.86, 6.42]
Other Direct Trauma	1.75	[1.33, 2.31]	1.98	[1.43, 2.74]	0.93	[0.55, 1.58]	1.53	[0.72, 3.27]
Indirect / Witness	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Race/Ethnicity								
			...		...		...	
Black	1.14	[0.90, 1.45]						
Hispanic	0.99	[0.75, 1.30]						
White	Reference	Reference						
Social Support								
							...	
High (46–48)	0.72	[0.57, 0.90]	0.72	[0.54, 0.95]	0.70	[0.41, 1.21]		
Fair (43–45)	0.71	[0.58, 0.88]	0.73	[0.56, 0.95]	0.67	[0.44, 1.01]		
Low (12–42)	Reference	Reference	Reference	Reference	Reference	Reference		

Note: Ellipsis (...) indicates variable not included in the model.

OR = Odds Ratio, adjusted for all factors with values included as well as age, education, health insurance, household income, and marital status. CI = confidence interval. IPV = Intimate partner violence.