



Published in final edited form as:

Psychol Trauma. 2010 March 1; 2(1): 31–39. doi:10.1037/a0018952.

Trauma, Depression, and Comorbid PTSD/Depression in a Community Sample of Latina Immigrants

Stacey Kaltman, PhD,

Department of Psychiatry Georgetown University, 613 Kober Cogan Hall, Washington, DC 20007

Bonnie L. Green, PhD,

Department of Psychiatry, Georgetown University

Mihriye Mete, PhD,

Department of Epidemiology and Biostatistics MedStar Research Institute, Hyattsville, MD

Nawar Shara, PhD, MPH, and

Department of Epidemiology and Biostatistics MedStar Research Institute, Hyattsville, MD

Jeanne Miranda, PhD

Department of Psychiatry and Biobehavioral Sciences, University of California Los Angeles

Stacey Kaltman: sk279@georgetown.edu

Abstract

Trauma exposure is frequently overlooked as a risk factor for psychiatric morbidity among studies with Latinos. The purpose of this study was to examine the relationships among trauma history, immigration-related factors, and mental health status among Latina immigrants. The current study used baseline data from a randomized clinical trial for the treatment of depression (Miranda et al., 2006) of 64 women with comorbid PTSD and depression, 69 with depression-only, and 61 with no Axis I mental disorder. Sixty-four percent of the sample was Central American and 75% percent reported trauma exposure. Multinomial logit analysis suggested fewer years in the US was associated with worse mental health status. Having a non-married marital status was also associated with worse mental health. Reporting four or more types of traumatic events was associated with an increase in the probability of comorbidity. These findings have important implications for future research and clinical practice.

Keywords

Latino; Latina; Immigrant; Trauma; PTSD; Depression; Comorbidity; Hispanic

Latinos represent the fastest growing minority group in the United States (US Census Bureau, 2004). Census projections suggest that by 2050, the number of Latinos will grow to approximately 97 million, representing a quarter of the US population. Recent epidemiological data suggests that the lifetime prevalence of psychiatric disorders is 28.14% among Latino men and 30.23% among Latinas (Alegria, Mulvaney-Day et al., 2007). Past-year prevalence is

Correspondence to: Stacey Kaltman, sk279@georgetown.edu.

Publisher's Disclaimer: The following manuscript is the final accepted manuscript. It has not been subjected to the final copyediting, fact-checking, and proofreading required for formal publication. It is not the definitive, publisher-authenticated version. The American Psychological Association and its Council of Editors disclaim any responsibility or liabilities for errors or omissions of this manuscript version, any version derived from this manuscript by NIH, or other third parties. The published version is available at www.apa.org/pubs/journals/tra

13.47% and 17.40% for men and women, respectively. Mental health disease burden among Latinos is further complicated by disparities in access to mental health services (Alegria, Chatterji et al., 2008; Cook, McGuire, & Miranda, 2007; Stockdale, Lagomasino, Siddique, McGuire, & Miranda, 2008). Evidence suggests that Latinos in need of mental health care underutilize mental health services compared to non-Latino Whites, are less likely to receive guideline concordant care, and are more likely to rely on primary care for the delivery of mental health services (Cabassa, Zayas, & Hansen, 2006), where treatment is often inadequate (Perez-Stable, Miranda, Muñoz, & Ying, 1990; Simon, 2002).

In a recent, large-scale epidemiological study, the National Latino and Asian American Study (NLAAS), foreign-born Latinos were shown to have lower lifetime and past-year prevalence of psychiatric disorders (24% and 13%) than their US-born counterparts (37% and 19%) (Alegria, Mulvaney-Day et al., 2007; Alegria, Canino et al., 2008). However, when Latinos were disaggregated into subgroups (i.e., Mexican, Puerto Rican, Cuban, other Latino), the Mexican subgroup was the only one to reliably demonstrate the “immigrant paradox,” or the buffering impact of foreign nativity against psychiatric disorder (Alegria, Canino et al., 2008). Risk was conferred by immigration before age 7, with early immigrants resembling US-born Latinos in levels of psychiatric disorder (Alegria, Sribney et al., 2007). Alegria, Sribney et al. (2007) and Cook, Alegria, Lin, and Guo (2009) suggest that factors other than those related to immigration warrant consideration when examining Latino mental health.

An important factor to consider when trying to interpret the seemingly inconsistent epidemiological data on the mental health of Latinos, is the relative under-emphasis on Latinos from certain countries and regions. In particular, Latinos from Central America have typically not been included in large-scale epidemiological studies or have been put into a heterogeneous group of “other Latinos” (Alegria et al., 2004). More inclusive studies and studies that focus on particular Latino subgroups are needed to flesh out the complete picture of risk and protective factors in Latino mental health.

A related contributor in explicating rates of psychiatric disorders is the important role of trauma exposure among Latinos (Eisenman, Gelberg, Liu, & Shapiro, 2003; Fortuna, Porche, & Alegria, 2008). Immigrants from multiple Central American countries have been exposed to war-related trauma and political violence. In particular, individuals living in El Salvador, Guatemala, and Nicaragua in the 1980–1990s were exposed to prolonged, low-intensity warfare. As a result of the prolonged wars, hundreds of thousands of Central Americans who became refugees struggled with the emotional and physical legacy of war and trauma exposure. Among a sample of primary care patients, Central American immigrants were 76% more likely and Mexican immigrants were 50% less likely to have experienced a traumatic event than non-Latino whites (Holman, Silver, & Waitzkin, 2000), suggesting differential risk. In that study, individuals who reported exposure to a traumatic event were twice as likely to meet criteria for a lifetime psychiatric disorder and 70% more likely to meet criteria for a disorder in the past year when compared to individuals with no trauma history.

Consistent with this, a high prevalence of post-traumatic stress disorder (PTSD; APA, 2000) has been found in studies of Central American primary care patients (Michultka, Blanchard, & Kalous, 1998; Salgado de Snyder, Cervantes, & Padilla, 1990). Study participants who reported exposure to political violence demonstrated increased risk of both PTSD and depression even when controlling for age, sex, country, years lived in the United States, acculturation, income, and health insurance status (Eisenman et al., 2003). Other types of traumatic exposure were not assessed in that study, leaving open the question of the contribution of other potentially traumatic stressors to the development of PTSD. For example, in addition to political violence, interpersonal trauma including intimate partner violence and

child abuse also tend to increase in the context of war and civil upheaval (Gibbs, Martin, Kupper, & Johnson, 2007; Usta, Farver, & Zein, 2008).

In the general trauma literature, the extremely common comorbidity between depression and PTSD has long been acknowledged (Creamer, Burgess, & McFarlane, 2001; Kessler, Sonnega, Hughes, & Nelson, 1995). Pathways to one or more diagnoses following exposure to trauma have been debated extensively (O'Donnell, Creamer, & Pattison, 2004; Shalev et al., 1998), with studies suggesting that depression is a risk factor for PTSD (Koenen et al., 2002), that PTSD is a risk factor for depression (Breslau, Davis, Peterson, & Schultz, 1997), or that the two disorders represent an underlying joint vulnerability (Breslau, Davis, Peterson, & Schultz, 2000; O'Donnell et al., 2004). In addition to PTSD, multiple studies have found a link between violence exposure and depression among Latinos (Hazen, Connely, Soriano, & Landsverk, 2008; Rodriguez et al., 2008). Understanding risk factors for the increased disease burden of having concurrent PTSD and depression is essential for appropriate screening and treatment planning.

The Women Entering Care Study (WE Care) (Miranda et al., 2003; Miranda et al., 2006) examined the treatment of depression in low-income, mostly African-American women and Latina immigrants from Central and South America in county health and social service agencies in the greater Washington, DC area. The study also collected data from a non-depressed comparison group. Because extensive data were collected on participants' trauma histories and symptoms of PTSD, the baseline data from the non-depressed participants, participants with depression only, and participants with comorbid depression and PTSD provide the opportunity to examine correlates of these mental health impacts of trauma exposure among Latina immigrants. Further, the three-group study design allows for a quantification of the association between depression and trauma histories, and the dose of trauma exposure associated with depression with and without PTSD. It was hypothesized that being from a Central American country would be associated with increased risk of being in the comorbid group.

Methods

Data were collected in conjunction with a larger treatment trial for depression. The institutional review boards of Georgetown University, the State of Maryland, and the University of California, Los Angeles approved all research procedures. Data for the current study were obtained during screening and baseline data collection.

Participants

Explanations of WE Care study recruitment processes, and inclusion and exclusion criteria have been detailed elsewhere (Miranda et al., 2003; Miranda et al., 2006; Miranda, Siddique, Der-Martirosian, & Belin, 2005). In summary, 16,286 African American, Latina immigrant, and White women who received county health and social services in suburban counties of Washington D.C. were screened for depression from March 1997 through December 2001. Of those women, 13,975 were eligible based on ethnicity and country of origin (Latina immigrants had to be from a Spanish-speaking Central or South American country). Approximately 11% (1,583) of ethnically eligible women screened positive for major depressive disorder based on the Primary Care Evaluation of Mental Disorders (PRIME-MD; Spitzer et al., 1994), a measure developed to screen rapidly for mental disorders by primary care physicians. Subsequently, 1,316 were excluded from the study due to (1) not meeting diagnostic criteria for current major depression (based on the Composite International Diagnostic Interview (CIDI; World Health Organization, 1997), (2) meeting diagnostic criteria on the CIDI but not receiving a score of 14 or greater on the Hamilton Depression Rating Scale (HDRS; Williams, 1988) upon reassessment one week later. The Hamilton was administered to confirm depression status, to

ensure that women with transient depressive symptoms were not included in the clinical trial, and to have a common metric for depressive symptomatology throughout the study, (3) having a serious comorbid disorder (e.g., alcohol/substance abuse or dependence, lifetime mania, psychosis), (4) already being enrolled in treatment, or (5) refusing randomization. The presence of other anxiety disorders was not an exclusion criterion for participants in the treatment trial. Two hundred sixty-seven women were enrolled in the trial. Ninety-four percent of the study participants were near or below federal poverty guidelines and 65% were uninsured. Of the trial participants, 133 were Latina immigrants. Sixty-four of the 133 depressed women were also identified as having past-year PTSD. Thus, for the current study, 69 women comprise the depression-only group and 64 women comprise the group with both PTSD and depression. This group will be referred to as the ‘comorbid’ group.

There were 61 study participants in the non-depressed group. These women were among those who were screened for the depression treatment trial but were found not to meet criteria for depression and who did not meet criteria for any current Axis I disorder based on the CIDI or lifetime PTSD based on the Structured Clinical Interview for DSM-IV - Non-patient version (SCID). Because these women were simultaneously being recruited for another study (Riley et al., 2009), the women also had to have a child between the ages of four and 10. Otherwise, they met the same inclusion criteria as depressed subjects. These participants were consecutively recruited. This group will be referred to as the ‘no mental disorder’ group.

Measures

Measures were administered orally due to low literacy within the sample. All assessments were administered in Spanish. Previously validated Spanish versions of the measures were used whenever possible. When they were not available (SLESQ; see below), the measures were translated using an iterative process that included bilingual study staff and community members from the countries represented by the study sample. Measures were back-translated and finalized with a translation team that worked for the United Nations. Interviewers were trained to a reliability criterion on each measure in a series of trainings with expert clinicians. The diagnostic interviews were reviewed by one of the investigators (BLG) for accuracy.

Demographic variables included age, marital status, employment status, ethnicity, country of origin, years in the US, and education level. Major depressive disorder (MDD) was assessed by the *CIDI* (World Health Organization, 1997). The *CIDI* was also used to assess generalized anxiety disorder, simple phobia, panic disorder with and without agoraphobia and social phobia.

Exposure to potentially traumatic events was assessed with the *Stressful Life Events Screening Questionnaire* (SLESQ; Corcoran, Green, Goodman, & Krinsley, 2000; Goodman, Corcoran, Turner, Yuan, & Green, 1998). The SLESQ asks about 13 potentially traumatic events in behavioral language. The two-week test-retest correlation for number of events reported was 0.89, with individual item kappas ranging from .31 to 1.00 (median kappa .73). Data from this questionnaire was used to calculate two trauma-related variables. The first, trauma history, is a dichotomous variable in which those with a positive trauma history reported experiencing one or more traumatic events. The second, number of trauma types, is a count of the number of different types of trauma that the participant endorsed.

PTSD was assessed with the SCID (First, Spitzer, Gibbon, & Williams, 1996) following a brief discussion to select the target traumatic event based on a structured event selection module. The event selection module, which was designed to identify the most upsetting event, included questions to identify the traumatic exposure most likely to be associated with a diagnosis of PTSD based on the participant’s self-reported reactions at the time of the event and the presence of several PTSD avoidance and intrusion symptoms. The PTSD module was administered up

to three times for three different traumas if the initial trauma(s) was not associated with PTSD. The goal of this procedure was to identify comorbid PTSD if it was present. The women were reimbursed \$10 for completing the baseline interview.

Procedures

Women were screened for depression during in-person recruitment, using the Primary Care Evaluation of Mental Disorders (PRIME-MD; Spitzer et al., 1994). At the time of this screening interview, demographic data was also collected. Women meeting screening criteria for depression were administered the CIDI (WHO, 1997) by phone followed by phone-administered HDRS (Williams, 1988) one week later to confirm depression diagnosis. Women meeting diagnostic criteria were then invited to participate in an in-person baseline clinical interview, which included the SLESQ (Corcoran et al., 2000; Goodman et al., 1998) and the PTSD module of the SCID (First et al., 1996).

Data Analyses

All data analyses were conducted with SPSS 16.0 for Windows XP and Intercooled Stata 9.2 for Windows. Descriptive statistics were used to describe the overall sample. The primary goal of the paper was to examine correlates of mental health status. First, variables of interest in three separate domains (demographic variables, immigration-related variables, and trauma-related variables) were examined individually for their association with the three-level outcome of mental health status (no disorder, depression-only, comorbid) using chi-square and multinomial logit analyses. Variables significant at the bivariable level were entered together in a multivariable multinomial logit model. The model used to analyze the three mental health status groups took into account the hypothesis that the outcome consisted of three distinct categories that reflect different mental health conditions and that comorbid cases were likely to be different from those who had depression-only and from those who had no mental disorder. The Wald test for combining alternatives was conducted to test this claim. The null hypothesis that alternatives/groups could be combined was rejected for all pairs (p -value < .001 for both models).

The multinomial logistic regression model is a model that simultaneously estimates all logits for all comparisons among the alternatives (Jull, 2006; Long, 1997). The independence of irrelevant alternatives (IIA), the assumption that the odds among all pairs of outcomes will remain the same in the presence of other alternatives (i.e., the odds of a given outcome in the depression-only vs. no mental disorder categories will remain the same if the comorbid category is introduced), is an important and restrictive assumption of this model. This assumption was tested via the commonly used Small-Hsiao Test, and was shown that it was not rejected when outcome 2 was excluded ($p = .25$) and outcome 3 was excluded ($p = .26$); outcome 1 was the base category.

Relative Risk Ratios (RRR) estimated by a multinomial logistic model are similarly interpreted as those from a dichotomous logistic regression. However, a RRR is the ratio of the relative risk of being in one category versus the base category for two levels of a variable. In our model, an example of an estimated RRR for the comparison between the comorbid category and the depression-only category would indicate the change in the relative risk of being in the comorbid category over the depression-only category for a unit change in the predictor variable, holding other variables constant. In order to make the results more intuitive and determine how the probability of being in each category changes based on the values of the covariates, we computed predicted probabilities for the outcomes in addition to presenting RRRs (Table 3). One common practice in presenting the results of such models has been to obtain predicted probabilities by changing the value of one variable of interest and holding others at certain

predefined values such as means or medians (Long & Freese, 2006). More specifically, the predicted probabilities of the three mental health status categories were evaluated in response to changes in the number of trauma types experienced among married women, thereby keeping marital status constant while keeping the 'age' and 'years in the US' variables constant at their mean levels. It is important to note that the predicted probabilities based on multinomial logit estimates cannot be used to estimate the actual incidence rates in the population due to the case-control study design.

Screening, CIDI phone assessment of depression, and baseline data were complete with the exception of 11 individuals missing data on the years in the US variable, 19 missing country of origin, and three missing trauma history data. In all analyses, missing data was handled through listwise deletion. For example, the multinomial logit is conducted on 180 cases due to listwise deletion of the 14 cases that were missing either the years in the US or trauma history variables that were included in the model. There was no significant difference between the missing cases and non-missing cases in terms of the distribution of the three level mental health status variable (Fisher's exact $p = 0.5$).

Results

Description of the Sample

The sample included 64 women with PTSD and depression, 69 with depression only, and 61 with no Axis I disorder. On average participants were young ($M = 30.6$ years, $SD = 6.7$) and had less than a high school education ($M = 9.6$ years of education, $SD = 4.2$). About half of the sample was married (51.0%), 19.6% had a partner, 13.9% were never married, 12.2% were separated, 2.1% were divorced, and 1.0% were widowed. Sixty-six percent of the sample reported being employed full or part-time during the past three months.

On average, participants had been in the US for 8.0 years ($SD = 5.1$) with a range of 0 to 24 years. The largest group of participants was from El Salvador (39.7%). Other countries of origin represented in the sample included Bolivia (10.8%), Guatemala (9.8%), Mexico (8.8%), and Honduras (6.2%). Less than 5% of the sample was from each of the following countries: Peru, the Dominican Republic, Ecuador, Nicaragua, Puerto Rico, Argentina, Costa Rica, Colombia, and Chile. When participants were grouped by whether they were from a Central American vs. South American country, 64.6% were from a Central American country.

Seventy-five percent of the entire sample endorsed exposure to one or more potentially traumatic events. The mean number of types of potentially traumatic experiences endorsed was 2.4 ($SD = 2.1$) with a range of 0 to 10. Table 1 presents the prevalence of each type of potentially traumatic event for the overall sample and the mental health status groups (no mental disorder, depression-only, comorbid). Adult physical violence was the most frequently reported type of trauma exposure for the sample overall.

More of the women in the comorbid group (57.1%) endorsed one or more anxiety disorders as compared to the women in the depression-only group (38.2%), $X^2(1) = 4.69, p < .05$. This was largely due to differences in the prevalence of agoraphobia without panic disorder between the comorbid (19%) and the depression-only (0%) groups, $X^2(1) = 14.26, p < .001$. The comorbid and depression-only groups did not differ in the frequency of any other anxiety disorder.

Correlates of Mental Health Status

Demographic Variables—Increased age was associated with a slightly decreased risk of being in the depressed-only (group index = 2) and comorbid (group index = 3) groups ($RRR_{31} = .95, p = .05, 95\% \text{ CI} = [.9, 1.0]$; $RRR_{21} = .93, p < .01, 95\% \text{ CI} = [.88, .98]$). On average, women in the no mental disorder (group index = 1) group ($M = 32.6, SD = 5.5$) were

older than the women in the depressed ($M = 29.3$, $SD = 6.6$) and comorbid ($M = 30.1$, $SD = 7.4$) groups. Not being married was associated with an increased risk of being in the depressed and comorbid groups ($RRR_{3I} = 4.6$, $p < .001$, 95% CI = [2.2, 9.8]; $RRR_{2I} = 3.0$, $p < .01$, 95% CI = [1.4, 6.2]). Forty-six percent of the depressed group and 36% of the comorbid group were married compared to 72% of the no mental disorder group. Years of education and employment status were not significantly related to mental health status.

Immigration-Related Variables—Having lived for more years in the US was associated with a decreased risk of being in the comorbid and depressed groups ($RRR_{3I} = .88$, $p < .001$, 95% CI = [.81, .95]; $RRR_{2I} = .90$, $p < .001$, 95% CI = [.84, .97]). On average, women in the depressed ($M = 7.4$, $SD = 5.0$) and comorbid ($M = 6.81$, $SD = 4.69$) groups had been in the US for fewer years than women in the no mental disorder group ($M = 10.0$, $SD = 5.0$). Women with any trauma history were in the US on average 2.6 years less than women without a trauma history ($t = 3.12$, $p < .05$). Fewer years in the US were correlated with greater numbers of types of trauma exposure ($r = -.19$, $p < .05$). Being from a Central American country was not significantly related to mental health status, to having a history of trauma exposure, or to the number of trauma types experienced.

Trauma Variables—Seventy-nine percent of depressed-only and 100% of comorbid women reported a trauma history vs. 44% of the no mental disorder women. Having experienced a greater number of types of potentially traumatic events was also associated with an increased risk of being in the depressed and comorbid groups ($RRR_{3I} = 3.6$, $p < .001$, 95% CI = [2.4, 5.1]; $RRR_{2I} = 2.1$, $p < .001$, 95% CI = [1.6, 2.9]). On average, women in the depressed ($M = 2.3$, $SD = 1.8$) and comorbid ($M = 4.1$, $SD = 1.9$) groups endorsed more types of potentially traumatic life events than women in the no mental disorder group ($M = 0.80$, $SD = 1.1$)¹. Table 1 shows that the proportion of participants who experienced a given trauma increases significantly across the mental health categories for almost all trauma types. Trauma variables that distinguished between the depression-only and comorbid groups included: rape, $X^2(1) = 17.92$, $p < .001$, attempted rape, $X^2(1) = 5.61$, $p < .05$, inappropriate sexual touching, $X^2(1) = 5.83$, $p < .05$, child physical abuse, $X^2(1) = 6.82$, $p < .01$, adult physical violence, $X^2(1) = 7.81$, $p < .01$, and other dangerous situation, $X^2(1) = 5.47$, $p < .05$. As shown in Table 1, a higher percentage of the comorbid group reported exposure to each of these events.

Multivariable Multinomial Logistic Regression Models

Significant predictors from the bivariate tests including age, marital status, years in the US, and trauma exposure variables were entered into multivariable models predicting depression and comorbid status (Table 2). Estimated RRRs relevant to each comparison between the outcome categories and p-values are presented. Marital status, years in the US, and trauma exposure continued to be significant correlates of mental health status. Having a marital status of anything other than married was associated with a 4.7 times increased odds of being in the comorbid category versus the no mental disorder category and with a 2.6 times increased odds of being in the depression-only versus the no mental disorder category. The odds of being in the comorbid category versus the no mental disorder were decreased by .89, and the odds of being in the depression-only versus the no mental disorder category decreased by .91 for every additional year spent in the US. Increases in relative risk ratios in the comorbid vs. the depression-only groups were not statistically significant when considering years in the US or marital status. Each unit increase in the number of trauma types was associated with an increase in the odds of the comorbid category versus no mental disorder by 3.6 and the comorbid versus

¹ When women with no reported exposure to traumatic events were excluded, the comorbid group continued to report a higher number of types of trauma exposure ($M = 4.1$, $SD = 1.9$) than the depression-only ($M = 2.9$, $SD = 1.6$) and no mental disorder ($M = 1.8$, $SD = 1.0$) groups.

the depression-only category by 1.7. The odds of being in the depression-only category versus no mental disorder also increased by 2.1 for each increase in the number of trauma types.

Differences between the Depression-only and Comorbid Groups

Table 3 illustrates the changes in the predicted probabilities of all mental health status categories with exposure to increasing numbers of types of traumas, as based on the estimated model in Table 2. Table 3 demonstrates that participants were more likely to be in the depression-only category than either the comorbid or the no mental health disorder categories if they reported two-to-three types of potentially traumatic experiences. There was a steady increase in the probability of being in the comorbid category with exposure to higher numbers of types of trauma exposures.

Discussion

This study of 133 depressed and 62 non-depressed female immigrants from Central and South America used baseline data from a randomized controlled trial of depression treatment to examine the relationship of demographic, immigration-related, and trauma-related variables with mental health status. Identifying risk factors for depression and its comorbidity with PTSD in this population has important public health significance given the clinical and economic costs of untreated and insufficiently-treated mental disorders (Jones & Cockrum, 2000; Moussavi et al., 2007; Murray & Lopez, 1996) and the high levels of trauma exposure and increased vulnerability to PTSD among Latino populations (Pole, Best, Metzler, & Marmar, 2005).

Trauma exposure was quite prevalent among this sample of Latina immigrants. Overall, 75% of the sample reported one or more exposures to a potentially traumatic event. This is consistent with levels of trauma exposure identified in the NLAAS (Fortuna et al., 2008). The level of trauma exposure identified in the current study is higher than typically found in nationally representative epidemiological studies (Kessler et al., 1994; Resnick, Kiplpatrick, Dansky, Saunders, & Best, 1993) and slightly higher than found in studies of non-immigrant primary care patients (e.g., 71% in Sansone, Sansone, & Wiederman, 1995). These findings corroborate prior research indicating a high level of trauma exposure among immigrant Latinos in primary care settings (Eisenman et al., 2003; Fortuna et al., 2008; Holman et al., 2000). Further research is needed to explore the impact of this level of trauma exposure and how to mitigate its impact.

In considering the specific types of exposure to potentially traumatic events, higher proportions of the women with comorbid PTSD and depression reported exposures to high-impact interpersonal traumatic events such as rape, childhood physical abuse, and adult physical violence than the two other groups. A substantial proportion of the women with depression-only reported exposure to one or more potentially traumatic events and sharply fewer women with no mental disorder reported any trauma exposure. As expected, the number of types of traumas experienced was associated with having a mental disorder, consistent with a large body of literature that demonstrates that trauma exposure is an important risk factor for many mental health problems (Kessler et al., 1995; Resnick et al., 1993), including depression (Kaltman, Krupnick, Stockton, Hooper, & Green, 2005; O'Donnell et al., 2004; Rayburn et al., 2005). The examination of the role of the number of types of trauma experienced revealed that participants were much more likely to be in the depression-only category than the comorbid category if they reported up to three types of traumatic experiences, after holding marital status, years in the US, and age constant. This is consistent with studies that have found a subsample of trauma exposed patients with depression who did not have PTSD (Mayou & Bryant, 2001; Shalev et al., 1998). When study participants reported more than three types of traumatic experiences, there was an increased probability of also having PTSD. The findings suggest that comorbidity is more likely to emerge after multiple trauma exposures.

Having any marital status other than married was associated independently with having a mental disorder, consistent with past research showing that being married is associated with better mental health (Strohschein, McDonough, Monette, & Shao, 2005). In a study of depression among Puerto Ricans in New York City, disrupted marital status (i.e. divorce, separation) and never having been married were risk factors for depression (Potter, Rogler, & Moscicki, 1995). The finding that marital status may be protective may be of particular importance in Latino communities given the primacy of family in many Latino cultures (*familismo*; Anez, Paris, Bedregal, Davidson, & Grilo, 2005; Canino & Canino, 1982; La Roche, 1999; Marin & Marin, 1991; Pole, Gone, & Kulkarni, 2008). Having a satisfying marital relationship may provide an important source of social support (Holt-Lunstad, Birmingham, & Jones, 2008), consistent with studies indicating that social support acts as a protective factor (Kawachi & Berkman, 2001) and as a buffer against the impact of difficult life events (Coker et al., 2002). In a sample of Mexican migrant workers, having ineffective social support was associated with high levels of depression (Hovey & Magaña, 2002). However, the direction of the current finding regarding marital status and mental health status should be considered with caution, given the cross-sectional nature of the data. It is possible that a more extensive trauma history and greater post-trauma psychiatric problems could lead to non-married status.

Having lived fewer years in the US was also associated with having a mental disorder. This finding contradicts a large body of literature that suggests that as time in the US increases, the likelihood of mental health problems also increases (Cook et al., 2009; Ortega, Rosenheck, Alegria, & Desai, 2000). One possible explanation is that recent immigrants may be more vulnerable to mental disorders due to more recent trauma exposure in their country of origin or during the immigration process. This is consistent with the current study showing that women with fewer years in the US were more likely to report trauma exposure. Further, the inconsistent findings across studies may be due to differences in the population studied on important demographic variables such as country of origin and gender. Future research should include a more extensive examination of the timing of trauma exposure, including pre-, intra-, or post-immigration. Future studies should also include an explicit measure of acculturation when examining the relationship between time in the US and mental health.

Being from a Central American country was not associated with mental health status, which is inconsistent with past research demonstrating an increased risk for PTSD among Central American immigrants. For example, in a study comparing recent Central American and Mexican immigrants, both groups had similar levels of loneliness, difficulty concentrating, lowered interest levels, and hopelessness (Cervantes, Salgado de Snyder, & Padilla, 1989). However, the immigrants from Central America reported significantly higher levels of PTSD symptoms, with approximately half of the Central American participants meeting DSM-III criteria for PTSD. Similarly, Locke, Southwick, McCloskey, & Fernandez-Esquer (1996) found high levels of mental health symptoms among a sample of Central American refugees. In the current study, these differences were not observed possibly due to the high prevalence of trauma exposure, especially interpersonal violence, among the participants regardless of country of origin. It is important to note that the majority of prior studies that observed a higher level of trauma and PTSD among Central American immigrants were conducted 15–20 years ago, which may suggest a cohort effect that is no longer applicable. The relationship between country of origin, trauma, and mental health among Latino immigrants warrants further examination in studies with more contemporary cohorts. Further, the current study used country of origin as a proxy for likely exposure to political violence, which at best is an imperfect strategy, although some SLESQ items such as those about rape and traumatic bereavement may have detected exposures related to political violence. Future studies should include a specific assessment of political violence (Eisenman et al., 2003).

A number of limitations warrant mention. First, the data presented are cross-sectional, and the directionality of the findings cannot be assessed. Some of the relationships identified may in fact be bi-directional. For example, instead of marital status being protective against mental disorder, it may be that individuals with mental disorders are less likely to marry. The directionality of these findings should be examined in future longitudinal studies. Second, the lack of a PTSD-only group limits the ability to definitively answer questions regarding comorbidity vs. single disorder in the wake of trauma. It is possible that some of the findings may be related to the presence of PTSD and not to comorbidity. Third, the findings are limited to immigrants and are not representative of the larger Latina population in the US. In addition, the immigrants included in this study were primarily young, low-income women recruited from social services and healthcare offices. Thus, the results are not generalizable to immigrant groups that are older, more financially well-off, or men. Fourth, the non-depressed control group was selected based on not meeting criteria for any major mental disorder. Thus, the comparison group is not representative of the full range of non-depressed individuals in the population. Fifth, the data on trauma exposure were based on retrospective reporting and are thus subjected to potential reporting biases. It is possible that patients with depression and PTSD were more likely to recall or report traumatic experiences due to negative affectivity and/or the salience of the events. It is also possible that the non-depressed control group was less likely to remember or report traumatic experiences. Sixth, the study does not address the possibility that a particular type of trauma exposure such as childhood abuse might be driving the relationship between exposure and mental health status. Finally, the study does not address the possibility of subthreshold PTSD among the depression-only participants. Despite these limitations, the complexity of the findings warrants replication and expansion in a prospective, longitudinal study.

Because Latina immigrants have limited access to mental health services and may prefer seeking assistance in primary care settings (Cabassa et al., 2006; Cook et al., 2007), the current findings have important implications for assessment and treatment. These results suggest that a proportion of depressed Latina patients may also have a history of trauma and PTSD and underscores the need for assessment of trauma and PTSD with this population as part of routine care. Data from the larger WE Care study (Green et al., 2006) as well as other studies (Campbell et al., 2007; Gerrity, Corson, & Dobscha, 2007) suggests that about one-third of depressed primary care patients also meet criteria for PTSD. Primary care providers should not rely on their patients to raise these issues, as Latina immigrants and others may not discuss their trauma exposure unless invited to do so by a provider. In a study of Central American immigrants in primary care settings, only 3% of patients who had experienced political violence exposure reported discussing it with a clinician (Eisenman et al., 2003). Identifying PTSD/depression comorbidity when it exists is important due to the associated increase in symptom burden and functional impairment (Green et al., 2006; Shalev et al., 1998) as well as the likelihood of differential response to treatment. Patients with comorbid PTSD and depression may be slower to respond to treatment and may experience residual symptoms (Green et al., 2006; Hegel et al., 2005), possibly requiring more intensive monitoring and additional intervention.

References

- Alegria M, Canino G, Shrout P, Woo M, Duan N, Vila D, et al. Prevalence of mental illness in immigrant and non-immigrant US Latino groups. *The American Journal of Psychiatry* 2008;165:359–369. [PubMed: 18245178]
- Alegria M, Chatterji P, Wells K, Cao Z, Chen CN, Takeuchi D, et al. Disparity in depression treatment among racial and ethnic minority populations in the United States. *Psychiatric Services* 2008;59:1264–1272. [PubMed: 18971402]

- Alegria M, Mulvaney-Day N, Torres M, Polo A, Cao Z, Canino G. Prevalence of psychiatric disorders across Latino subgroups in the United States. *American Journal of Public Health* 2007;97:68–75. [PubMed: 17138910]
- Alegria M, Sribney W, Woo M, Torres M, Guaraccia P. Looking beyond nativity the relation of age of immigration, length of residence, and birth cohorts of the risk of onset of psychiatric disorders for Latinos. *Research in Human Development* 2007;4:19–47. [PubMed: 19412354]
- Alegria M, Takeuchi D, Canino G, Duan N, Shrout P, Mming X, et al. *International Journal of Methods in Psychiatric Research* 2004;13:208–220. [PubMed: 15719529]
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders-IV-TR*. 4. Washington, D.C.: American Psychiatric Association; 2000.
- Anez LM, Paris M, Bedregal LE, Davidson L, Grilo CM. Application of cultural constructs in the care of first generation Latino clients in a community mental health setting. *Journal of Psychiatric Practice* 2005;11:221–230. [PubMed: 16041232]
- Breslau N, Davis GC, Peterson EL, Schultz L. Psychiatric sequelae of posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry* 1997;54:81–87. [PubMed: 9006404]
- Breslau N, Davis G, Peterson EL, Schultz LR. A second look at comorbidity in victims of trauma: The posttraumatic stress disorder - major depression connection. *Biological Psychiatry* 2000;48:902–909. [PubMed: 11074228]
- Cabassa LJ, Zayas LH, Hansen MC. Latino adults' access to mental health care: A review of epidemiological studies. *Administration and Policy in Mental Health and Mental Health Services Research* 2006;33:316–330. [PubMed: 16598658]
- Campbell DG, Felker BL, Liu CF, Yano EM, Kirchner JE, Chan D, et al. Prevalence of depression-PTSD comorbidity: Implications for clinical practice guidelines and primary care-based interventions. *Journal of General Internal Medicine* 2007;22:888–889. [PubMed: 17375357]
- Canino G, Canino IA. Culturally syntonic family therapy for migrant Puerto Ricans. *Hospital and Community Psychiatry* 1982;33:299–303. [PubMed: 7076145]
- Cervantes RC, Salgado de Snyder VN, Padilla AM. Posttraumatic stress in immigrants from Central America and Mexico. *Hospital and Community Psychiatry* 1989;40:615–619. [PubMed: 2737629]
- Coker AL, Smith PH, Thompson MP, McKeown RE, Bethea L, Davis KE. Social support protects against the negative effects of partner violence on mental health. *Journal of Women's Health* 2002;11:465–476.
- Cook B, Alegria M, Lin JY, Guo J. Pathways and Correlates Connecting Exposure to the US and Latino Mental Health. *American Journal of Public Health* 2009;99:2247–2254. [PubMed: 19834004]
- Cook B, McGuire T, Miranda J. Measuring trends in mental health care disparities, 2000–2004. *Psychiatric Services* 2007;58:1533–1540. [PubMed: 18048553]
- Corcoran, CB.; Green, BL.; Goodman, LA.; Krinsley, KE. Conceptual and methodological issues in trauma history assessment. In: Shalev, A.; Yehuda, R.; McFarlane, AC., editors. *International handbook of human response to trauma*. New York: Kluwer Academic/Plenum Publishers; 2000. p. 223-232.
- Creamer M, Burgess P, McFarlane AC. Post-traumatic stress disorder: Findings from the Australian National Survey of Mental Health and Well-Being. *Psychological Medicine* 2001;31:1237–1247. [PubMed: 11681550]
- Eisenman DP, Gelberg L, Liu H, Shapiro MF. Mental health and health-related quality of life among adult Latino primary care patients living in the United States with previous exposure to political violence. *Journal of the American Medical Association* 2003;290:627–634. [PubMed: 12902366]
- First, MB.; Spitzer, RL.; Gibbon, M.; Williams, JBW. *Structured Clinical Interview for Axis I DSM-IV*. New York: Biometrics Research Department, New York State Psychiatric Institute; 1996.
- Fortuna L, Porche M, Alegria M. Political violence, psychosocial trauma, and the context of mental health services among immigrant Latinos in the United States. *Ethnicity & Health* 2008;13:435–463. [PubMed: 18850369]
- Gerrity MS, Corson K, Dobscha SK. Screening for posttraumatic stress disorder in VA primary care patients with depression symptoms. *Journal of General Internal Medicine* 2007;22:1321–1324. [PubMed: 17634781]

- Gibbs DA, Martin SL, Kupper LL, Johnson RE. Child maltreatment in enlisted soldiers' families during combat-related deployments. *Journal of the American Medical Association* 2007;298:528–535. [PubMed: 17666673]
- Goodman LA, Corcoran C, Turner K, Yuan N, Green BL. Assessing traumatic event exposure: General issues and preliminary findings for the stressful life events screening questionnaire. *Journal of Traumatic Stress* 1998;11:521–542. [PubMed: 9690191]
- Green BL, Krupnick JL, Chung J, Siddique J, Krause ED, Revicki D, et al. Impact of PTSD comorbidity on one-year outcomes in a depression trial. *Journal of Clinical Psychology* 2006;62:815–835. [PubMed: 16703602]
- Hazen AL, Connely CD, Soriano FI, Landsverk JA. Intimate partner violence and psychological functioning in Latina women. *Health Care for Women International* 2008;29:282–299. [PubMed: 18350428]
- Hegel MT, Unützer J, Tang L, Areán PA, Katon W, Noël PH, et al. Impact of comorbid panic and posttraumatic stress disorder on outcomes of collaborative care for late-life depression in primary care. *American Journal of Geriatric Psychiatry* 2005;13:48–58. [PubMed: 15653940]
- Holman EA, Silver RC, Waitzkin H. Traumatic life events in primary care patients: A study in an ethnically diverse sample. *Archives of Family Medicine* 2000;9:802–810. [PubMed: 11031385]
- Holt-Lunstad J, Birmingham W, Jones BQ. Is there something unique about marriage? The relative impact of marital status, relationship quality, and network social support on ambulatory blood pressure and mental health. *Annals of Behavioral Medicine* 2008;35:239–244. [PubMed: 18347896]
- Hovey JD, Magaña CG. Exploring the mental health of Mexican migrant farm workers in the Midwest: Psychosocial predictors of psychological distress and suggestions for prevention and treatment. *Journal of Psychology* 2002;136:493–513. [PubMed: 12431034]
- Jones ME, Cockrum PC. A critical review of published economic modelling studies in depression. *Pharmacoeconomics* 2000;17:555–583. [PubMed: 10977394]
- Jull, S. An introduction to Stata for health researchers. College Station, TX: StataCorp, LP; 2006.
- Kaltman S, Krupnick J, Stockton P, Hooper L, Green BL. Psychological impact of types of sexual trauma among college women. *Journal of Traumatic Stress* 2005;18:547–555. [PubMed: 16281253]
- Kawachi I, Berkman LF. Social ties and mental health. *Journal of Urban Health* 2001;78:458–467. [PubMed: 11564849]
- Kessler R, McGonagle K, Zhao J, Nelson C, Hughes M, Eshelman S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. *Archives of General Psychiatry* 1994;51:8–19. [PubMed: 8279933]
- Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry* 1995;52:1048–1060. [PubMed: 7492257]
- Koenen KC, Harley R, Lyons MJ, Wolfe J, Simipson JC, Golderberg J, et al. A twin registry study of familial and individual risk factors for trauma exposure and posttraumatic stress disorder. *Journal of Nervous & Mental Disease* 2002;190:209–218. [PubMed: 11960081]
- La Roche MJ. The association of social relations and depression levels among Dominicans in the United States. *Hispanic Journal of Behavioral Science* 1999;21:420–430.
- Locke CJ, Southwick K, McCloskey LA, Fernandez-Esquer ME. The psychological and medical sequelae of war in Central American refugee mothers and children. *Archives of Pediatric and Adolescent Medicine* 1996;150:822–828.
- Long, JS. Regression models for categorical and limited dependent variables. Sage Publications, Inc; 1997.
- Long, JS.; Freese, J. Regression Models for Categorical Dependent Variables Using Stata. 2. Stata Press; 2006.
- Marin, G.; Marin, BV. Research with Hispanic populations. Newbury Park, CA: Sage; 1991.
- Mayou R, Bryant B. Outcome in consecutive emergency department attenders following a road traffic accident. *British Journal of Psychiatry* 2001;179:528–534. [PubMed: 11731357]
- Michultka D, Blanchard EB, Kalous T. Responses to civilian war experiences: Predictors of psychological functioning and coping. *Journal of Traumatic Stress* 1998;11:571–577. [PubMed: 9690194]

- Miranda J, Chung JY, Green BL, Krupnick J, Siddique J, Revicki DA, et al. Treating depression in predominantly low-income young minority women: A randomized controlled trial. *Journal of the American Medical Association* 2003;290:57–65. [PubMed: 12837712]
- Miranda J, Green BL, Krupnick JL, Chung J, Siddique J, Belin T, et al. One-year outcomes of a randomized clinical trial of treating depression in predominantly low-income young minority women. *Journal of Consulting & Clinical Psychology* 2006;74:99–111. [PubMed: 16551147]
- Miranda J, Siddique J, Der-Martirosian C, Belin T. Depression among Latina immigrant mothers separated from their children. *Psychiatric Services* 2005;56:717–720. [PubMed: 15939949]
- Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *The Lancet* 2007;370:851–858.
- Murray, CJL.; Lopez, AD. *The global burden of disease*. Cambridge, MA: Harvard University Press; 1996.
- O'Donnell ML, Creamer M, Pattison P. Posttraumatic stress disorder and depression following trauma: Understanding comorbidity. *American Journal of Psychiatry* 2004;161:1390–1396. [PubMed: 15285964]
- Ortega AN, Rosenheck R, Alegria M, Desai RA. Acculturation and lifetime risk of psychiatric and substance use disorders among Hispanics. *Journal of Nervous and Mental Disease* 2000;188:728–735. [PubMed: 11093374]
- Perez-Stable EJ, Miranda J, Muñoz RF, Ying YW. Depression in medical outpatients: Underrecognition and misdiagnosis. *Archives of Internal Medicine* 1990;150:1083–1088. [PubMed: 2184790]
- Pole N, Best SR, Metzler T, Marmar CR. Why are Hispanics at greater risk for PTSD? *Cultural Diversity and Ethnic Minority Psychology* 2005;11:144–161. [PubMed: 15884985]
- Pole N, Gone JP, Kulkarni M. Posttraumatic stress disorder among ethnoracial minorities in the United States. *Clinical Psychology: Science and Practice* 2008;15:35–61.
- Potter LB, Rogler LH, Moscicki EK. Depression among Puerto Ricans in New York City: The Hispanic Health and Nutrition Examination Survey. *Social Psychiatry and Psychiatric Epidemiology* 1995;30:185–193. [PubMed: 7491514]
- Rayburn NR, Wenzel SL, Elliott MN, Hambarsoomians K, Marshall GN, Tucker JS. Trauma, depression, coping, and mental health service seeking among impoverished women. *Journal of Consulting and Clinical Psychology* 2005;73:667–677. [PubMed: 16173854]
- Resnick HS, Kilpatrick DG, Dansky BS, Saunders BE, Best CL. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology* 1993;61:984–991. [PubMed: 8113499]
- Riley A, Coiro M, Broitman M, Hurley K, Colantuoni E, Bandeen-Roche K, et al. Mental health and functioning of children of low-income depressed mothers: Influences of parenting, family environment and raters. *Psychiatric Services* 2009;60:329–336. [PubMed: 19252045]
- Rodriguez MA, Heilemann MV, Fielder E, Ang A, Nearez F, Mangione CM. Intimate partner violence, depression, and PTSD among pregnant Latina women. *Annals of Family Medicine* 2008;6:44–52. [PubMed: 18195314]
- Salgado de Snyder VN, Cervantes RC, Padilla AM. Migration and PTSD: The case of Mexicans and Central Americans in the US. *Acta Psiquiatrica y Psicologica de America Latina* 1990;36:137–145. [PubMed: 2101550]
- Sansone RA, Sansone LA, Wiederman M. The prevalence of trauma and its relationship to borderline personality symptoms and self-destructive behaviors in a primary care setting. *Archives of Family Medicine* 1995;4:439–442. [PubMed: 7742967]
- Shalev AY, Freedman S, Peri T, Branes D, Sahar T, Orr SP, et al. Prospective study of posttraumatic stress disorder and depression following trauma. *American Journal of Psychiatry* 1998;155:630–637. [PubMed: 9585714]
- Simon GE. Evidence review: Efficacy and effectiveness of antidepressant treatment in primary care. *General Hospital Psychiatry* 2002;24:213–224. [PubMed: 12100832]
- Spitzer RL, Williams JB, Kroenke K, Linzer M, deGruy FV 3rd, Hahn SR, et al. Utility of a new procedure for diagnosing mental disorders in primary care. The PRIME-MD 1000 study. *JAMA* 1994;272:1749–1756. [PubMed: 7966923]

- Stockdale S, Lagomasino I, Siddique J, McGuire T, Miranda J. Racial and ethnic disparities in detection and treatment of depression and anxiety among psychiatric and primary health care visits, 1995–2005. *Medical Care* 2008;46:668–677. [PubMed: 18580385]
- Strohschein L, McDonough P, Monette G, Shao Q. Marital transitions and mental health: are there gender differences in the short-term effects of marital status change? *Social Science and Medicine* 2005;61:2293–2303. [PubMed: 16099576]
- US Census Bureau. Unpublished manuscript. 2004. Hispanic and Asian Americans increasing faster than overall population.
- Usta J, Farver JA, Zein L. Women, war, and violence: Surviving the experience. *Journal of Women's Health* 2008;17:793–804.
- Williams JB. A structured interview guide for the Hamilton Depression Rating Scale. *Archives of General Psychiatry* 1988;45:742–747. [PubMed: 3395203]
- World Health Organization. Composite International Diagnostic Interview - Version 2.1. Geneva: World Health Organization; 1997.

Table 1

Prevalence of Trauma Types for Overall Sample and by Mental Health Status

Type of Trauma	Overall	No MH (N = 61)	Dep Only (N = 69)	Comorbid (N = 64)	p *
Adult physical violence	36.0%	8.5%	36.8%	61.3%	< .001
Traumatic bereavement	28.6%	19.0%	28.4%	37.5%	= .08
Childhood physical abuse	27.34%	5.12%	26.5%	48.4%	< .001
Other extremely frightening situation	25.4%	5.5%	28.6%	39.7%	< .001
Rape	20.9%	1.7%	13.2%	46.9%	< .001
Witnessed killing/harm to another	17.9%	8.5%	17.9%	26.6%	< .05
Robbery/mugging	17.3%	7.1%	15.0%	28.6%	< .01
Attempted rape	15.0%	3.5%	11.9%	28.6%	< .001
Life threatening illness	14.2%	1.7%	19.4%	20.3%	< .01
Inappropriate sexual touching	12.2%	6.9%	7.4%	22.2%	< .05
Threatened with weapon	12.1%	3.5%	11.8%	20.3%	< .05
Other dangerous situation	10.2%	7.3%	4.8%	18.3%	< .05
Life threatening accident	9.0%	3.5%	10.5%	12.5%	ns

Abbreviations: No MH = No Mental Health Disorder, Dep Only = Depression Only, Comorbid = Comorbid Depression and PTSD.

* Fisher's exact p-value

Table 2

Multinomial Logistic Regression Models of the Mental Health Status (No mental disorder = 1, Depression-only =2, Comorbid Depression and PTSD = 3)

Variables	LLR* p-value	3 vs. 1 RRR (p-value) 95% CI	3 vs. 2 RRR (p-value) 95% CI	2 vs. 1 RRR (p-value) 95% CI
Age	.13	0.99(0.85) [0.92, 1.07]	1.1(0.13) [0.98, 1.12]	0.95(0.09) [0.89, 1.01]
Marital Status	.015	4.7(0.01) [1.6, 13.7]	1.8(0.16) [0.8, 4.2]	2.6(0.04) [1.0, 6.4]
Years in US	.04	0.89(.03) [0.80, 0.99]	0.98(0.66) [0.90, 1.07]	0.91(0.03) [0.83, 0.99]
# of Trauma Types	<.001	3.6(<.001) [2.5, 5.3]	1.7(<.001) [1.3, 2.1]	2.1(<.001) [1.5, 3.0]

* LLR=Log-Likelihood Ratio Test for independent variables. The LLR tests the null hypothesis that all coefficients associated with given variables across equations are zero. A significant LLR p-value ($p < .05$) indicates that the given variable has a significant effect overall.

Table 3

Predicted Probabilities for the Multinomial Logistic Regression Model 2 while Varying the Number of Trauma Types and Holding Age and Years in the US Constant at their Means among Married Women

No. Trauma Types	Predicted Probabilities		
	No MH	Dep Only	Comorbid
0	.74	.23	.03
1	.55	.37	.08
2	.34	.49	.17
3	.17	.52	.31
4	.07	.47	.46
5	.02	.36	.62
6	.01	.25	.74
7	.00	.25	.75

Abbreviations: No MH = No Mental Health Disorder, Dep Only = Depression Only, Comorbid = Comorbid Depression and PTSD. Note: This table examines the predicted probabilities of the three mental health status categories in response to changes in the number of trauma types experienced for married women keeping the “age” and “Years in the US” variables constant at their mean levels (30.64 years old and 7.96 years, respectively).