



Published in final edited form as:

Anxiety Stress Coping. 2017 May ; 30(3): 347–363. doi:10.1080/10615806.2016.1228900.

Racial/Ethnic Differences Moderate Associations of Coping Strategies and Posttraumatic Stress Disorder Symptom Clusters among Women Experiencing Partner Violence: A Multigroup Path Analysis

Nicole H. Weiss, Ph.D.¹, Clinesha D. Johnson, M.A., M.Ed¹, Ateka Contractor, Ph.D.², Courtney Peasant, Ph.D.³, Suzanne C. Swan, Ph.D.⁴, and Tami P. Sullivan, Ph.D.¹

¹Department of Psychiatry, Yale University School of Medicine, 389 Whitney Ave, New Haven, CT 06511

²Boston VA Research Institute, 150 South Huntington Ave, Jamaica Plain, MA 02130

³Center for Interdisciplinary Research on AIDS, Yale University School of Public Health, 135 College Street, New Haven, CT 06510

⁴Department of Psychology, University of South Carolina, 1512 Pendleton Street, Columbia, SC 29208

Abstract

Background—Past research underscores the key role of coping strategies in the development, maintenance, and exacerbation of posttraumatic stress disorder (PTSD) symptoms. The goal of the current study was to extend existing literature by examining whether race/ethnicity moderates the relations among coping strategies (social support, problem-solving, avoidance) and PTSD symptom clusters (intrusion, avoidance, numbing, arousal).

Methods—Participants were 369 community women (134 African Americans, 131 Latinas, 104 Whites) who reported bidirectional aggression with a current male partner. Multigroup path analysis was utilized to test the moderating role of race/ethnicity in a model linking coping strategies to PTSD symptom clusters.

Results—The strength and direction of relations among coping strategies and PTSD symptom clusters varied as a function of race/ethnicity. Greater social support coping was related to more arousal symptoms for Latinas and Whites. Greater problem-solving coping was related to fewer arousal symptoms for Latinas. Greater avoidance coping was related to more symptoms across many of the PTSD clusters for African Americans, Latinas, and Whites, however, these relations were strongest for African Americans.

Conclusion—Results provide support for the moderating role of race/ethnicity in the relations among coping strategies and PTSD symptom clusters, and highlight potential targets for culturally-informed PTSD treatments.

Correspondence concerning this article should be sent to Tami P. Sullivan, Ph.D., Division of Prevention and Community Research and The Consultation Center, Department of Psychiatry, Yale University School of Medicine, 389 Whitney Ave, New Haven, CT, 06511, or tami.sullivan@yale.edu.

Keywords

posttraumatic stress disorder; coping; intimate partner violence; racial and ethnic differences; women

One-third of women in the United States report physical, sexual, and/or psychological victimization by an intimate partner in their lifetime (Black et al., 2011). Posttraumatic stress disorder (PTSD) is highly prevalent among women who experience intimate partner violence (IPV), with rates ranging from 31% to 84% (Golding, 1999). PTSD symptoms are related to a wide range of deleterious outcomes in this population, including co-occurring physical and psychiatric problems (Coker, Smith, Bethea, King, & McKeown, 2000; Coker et al., 2002), risky and health-compromising behaviors (Sullivan & Holt, 2008; Weiss, Dixon-Gordon, Duke, & Sullivan, 2015), and significant impairment in functioning, even among women who do not meet full diagnostic criteria for PTSD (Hellmuth, Jaquier, Swan, & Sullivan, 2014). Initial evidence indicates that IPV and related PTSD symptoms are particularly pronounced among specific racial/ethnic groups, with African Americans (versus Whites and Latinas) reporting more frequent and severe IPV (e.g., Caetano, Cunradi, Schafer, & Clark, 2000; Caetano, Schafer, & Cunradi, 2001; Hirth & Berenson, 2012) and White (versus African American and Latina) IPV-victimized women reporting greater PTSD symptoms (Hirth & Berenson, 2012; Lilly & Graham-Bermann, 2009; Wright, Perez, & Johnson, 2010). It is therefore critical that research explore the role of race/ethnicity in factors linked to PTSD symptoms. Such findings may inform the development of culturally-informed interventions for reducing PTSD symptoms in this population.

The impact of race/ethnicity on the associations among coping strategies used to manage stress and PTSD symptoms may be particularly relevant to explore in this regard. Various coping strategies have been proposed in the extant literature (for a review, see Skinner, Edge, Altman, & Sherwood, 2003). Amirkhan (1990) compiled a comprehensive list of coping strategies and utilized factor analysis to explicate key strategies individuals employ to cope with recent stressful events in particular. Three domains of coping strategies were identified: social support (i.e., turning to others for comfort, advice, or human contact), problem-solving (i.e., instrumental, problem-directed strategies), and avoidance (i.e., physical or psychological withdrawal). Past research underscores the key role of these coping strategies in the development, maintenance, and exacerbation of PTSD symptoms following trauma in general. For instance, meta-analytic reviews indicate that social support (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003), problem-solving, and avoidance (Littleton, Horsley, John, & Nelson, 2007) coping are related to PTSD symptoms. Further, across longitudinal studies, lower social support (Carlier, Lamberts, & Gersons, 1997; Dirkzwager, Bramsen, & van der Ploeg, 2003; Lawrence & Fauerbach, 2003) and problem-solving (Dirkzwager, Bramsen, & van der Ploeg, 2003) coping and greater avoidance coping (Benotsch et al., 2000; Mellman, David, Bustamante, Fins, & Esposito, 2001; Sharkansky et al., 2000) predict greater PTSD symptoms. Finally, individuals who develop PTSD report higher pre- (vs. post-) trauma levels of social support and problem-solving coping and lower pre- (vs. post-) trauma levels of avoidance coping than those who do not develop PTSD (Gil & Caspi, 2006; Keane, Scott, Chavoya, Lamparski, & Fairbank, 1985).

It warrants mention that the strength and direction of some of the aforementioned coping-PTSD associations have been found to differ in samples of IPV-victimized women. Research examining the relation between social support coping and PTSD symptoms in this population is inconclusive. Whereas some investigations among IPV-victimized women have found greater social support to be associated with fewer PTSD symptoms (Coker et al., 2002; Coker, Watkins, Smith, & Brandt, 2003), other investigations have failed to find a buffering effect of social support on mental health outcomes (Follingstad, Brennan, Hause, Polek, & Rutledge, 1991; Sato & Heiby, 1992). Social supports may respond negatively when women describe episodes of violence in their relationships (Sullivan, Schroeder, Dudley, & Dixon, 2010), negating their potential benefits. For example, according to Mitchell and Hodson (1983), family and friends may be less sympathetic, minimize the severity of the problem, try to avoid or change the topic, and/or become frustrated and impatient. Regarding the association between problem-solving and PTSD symptoms, greater problem-solving coping generally has been shown to confer psychological benefits following traumatic exposure (e.g., fewer PTSD symptoms; Littleton, Horsley, John, & Nelson, 2007); however, among IPV-victimized women, greater problem-solving coping is either not significantly related to PTSD symptoms (Arias & Pape, 1999; Taft, Resick, Panuzio, Vogt, & Mechanic, 2007) or associated with more PTSD symptoms (Kocot & Goodman, 2003). For individuals in relationships characterized by IPV, the use of problem-focused coping strategies to manage relationship stressors may result in failure and a sense of hopelessness, as well as heighten conflict and risk for victimization (Lewis et al., 2006). Indeed, research suggests that problem-solving coping may only confer psychological benefits for individuals in environments that are perceived as controllable (Valentiner, Holahan, & Moos, 1994; Vitaliano, DeWolfe, Maiuro, Russo, & Katon, 1990). Finally, and consistent with findings from the general population, greater avoidance coping has been found to predict greater PTSD symptoms among IPV-victimized women (Krause, Kaltman, Goodman, & Dutton, 2008).

Given the plethora of research highlighting the impact of coping strategies on PTSD symptoms generally and among IPV-victimized women in particular, a necessary next step is to explicate moderators of this relation. Findings of such studies may identify IPV-victimized women who would most benefit from PTSD treatments that target specific coping strategies. Race/ethnicity is one factor that may impact the strength of the coping-PTSD relation. Race/ethnicity has been found to predict the frequency with which women report using specific coping strategies (Brantley, O'hea, Jones, & Mehan, 2002; Chapman & Mullis, 2000; El-Khoury et al., 2004; Ford, 2012; Maton et al., 1996). Because IPV-victimized African American women have historically experienced greater difficulty accessing social services, including formal sources of support for IPV (Hampton, Oliver, & Magarian, 2003), they may rely more heavily on informal support networks to manage relationship crises (Heron, Twomey, Jacobs, & Kaslow, 1997). Consistent with this assertion, African Americans report greater use of social support coping than their White counterparts (Plummer & Slane, 1996). Conversely, although Latinas have also historically been denied equal access to IPV services (Ingram, 2007), IPV-victimized Latinas may be less likely to utilize social supports to manage relationship problems than individuals from other racial/ethnic groups because some aspects of some Latino cultures and traditions

consider IPV to be both a private matter and an acceptable part of intimate relationships (Lewis, West, Bautista, Greenberg, & Done-Perez, 2005; Torres, 1991). Further, although theoretical and empirical literature linking race/ethnicity to problem-solving coping is limited, preliminary research in non-IPV samples suggests that African Americans are more likely to use problem-solving coping than Whites (Plummer & Slane, 1996; Tate, Van Den Berg, Hansen, Kochman, & Sikkema, 2006). Indeed, Plummer and Slane (1996) purport that the chronic and heightened stress burden among African Americans requires greater use of not only problem-solving coping, but also of all coping strategies. Conversely, Latinas may be less likely to use problem solving given evidence to suggest that they endorse more fatalistic beliefs, such as a tendency to see events as inevitable and unalterable (Perilla, Norris, & Lavizzo, 2002). Lastly, consistent with research suggesting that African Americans often are socialized in ways that generate greater emotional restriction and repression (Consedine, Magai, & Neugut, 2004) and less emotional expression (Brantley, O'hea, Jones, & Mehan, 2002), African Americans have been found to utilize avoidance coping strategies more frequently when experiencing distress than their White counterparts (Rodrigue, 1997). Notably, we were not able to identify any studies that had examined racial/ethnic differences in these coping strategies among IPV-victimized women in particular.

Importantly, research suggests that the use of different coping strategies may be associated with divergent health outcomes for African Americans, Latinas, and Whites (Aldridge-Gerry et al., 2011; Douglas, Jimenez, Lin, & Frisman, 2008; El-Khoury et al., 2004; Koenig et al., 1998; Musick, Koenig, Hays, & Cohen, 1998; Steffen, Hinderliter, Blumenthal, & Sherwood, 2001). For instance, in a sample of college students, Aldridge-Gerry et al. (2011) found that religious and problem-solving coping were related to less alcohol consumption in African Americans and Whites, respectively, whereas minimization and social support coping were related to more alcohol consumption in African Americans and Asian Americans, respectively. Likewise, Richman, Soher, Rospenda, and Shannon (2011) found that maladaptive (i.e., denial and self-blame) and adaptive (i.e., positive reframing and humor) coping strategies were associated with lower problem drinking among African American and Latino/a college students (relative to White college students). Although it is unlikely that these findings will generalize to IPV-victimized women, these preliminary studies support the notion that that specific coping strategies may be more protective for some racial/ethnic groups than for others.

Finally, race/ethnicity has been found to influence the severity of PTSD symptoms. Differential exposure and differential vulnerability are two prominent theories that have been set forth to explain racial/ethnic differences in PTSD symptoms following traumatic exposure (see Perilla, Norris, & Lavizzo, 2002). According to the differential exposure theory, racial/ethnic minorities are at increased risk for traumatic exposure, subsequently heightening their risk for PTSD symptoms. Alternatively, the differential vulnerability theory purports that racial/ethnic minorities demonstrate greater PTSD symptoms because they are more affected by stressors, regardless of the severity of their traumatic exposure. For instance, racial/ethnic minorities may not have equal access to economic and social resources that may buffer the impact of traumatic exposure. Consistent with these aforementioned theories, national surveys and meta-analyses have found that African

Americans and/or Latinos/as report greater PTSD symptoms than Whites following general traumatic exposure (Brewin, Andrews, & Valentine, 2000; Foa, Hembree, & Rothbaum, 2007; Frueh, Brady, & de Arellano, 1998; Perilla, Norris, & Lavizzo, 2002; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Notably, however, investigations of racial/ethnic differences in PTSD symptoms among IPV-victimized women are scant, and, among the five studies we were able to identify, discrepant findings were detected. Specifically, results of three such studies suggest that IPV-victimized White women experience greater PTSD symptoms than their African American and Latina counterparts (Hirth & Berenson, 2012; Lilly & Graham-Bermann, 2009; Wright et al., 2010), whereas two studies found no racial/ethnic differences in PTSD symptoms among IPV-victimized African American and White women (Jones, Bogat, Davidson II, von Eye, & Levendosky, 2005; Kramer, Johnson, & Johnson, 2015). Given these conflicting findings, additional research is needed, including examination of potential racial/ethnic differences in PTSD symptom clusters in particular, among IPV-victimized women.

The goals of the current study were twofold: (1) to explore racial/ethnic differences in coping strategies (i.e., social support, problem-solving, avoidance) and PTSD symptom clusters (i.e., intrusion, avoidance, numbing, arousal) and (2) to identify the potential moderating role of race/ethnicity (African American versus Latina versus White) in the relations among coping strategies and PTSD symptom clusters among IPV-victimized community women in relationships characterized by bidirectional aggression. Our focus on women who use and are victimized by IPV enhances the representativeness of the study findings, as bidirectional IPV is the most common pattern of IPV in the United States (Langhinrichsen-Rohling, Selwyn, & Rohling, 2012). This study contributes to past research in several noteworthy ways. First, a dearth of research has comparatively examined coping strategies among African American, Latina, and White women generally or those experiencing IPV in particular. It is vital that investigations explicate whether specific coping strategies serve a protective or risk function for various racial/ethnic groups, particularly those most highly represented in the United States (White = 62.6%, Latino/a = 17.1%, African American = 13.2%; United States Census Bureau, 2015). Findings of such studies may inform interventions that are tailored to the unique needs of IPV-victimized African American, Latina, and White community women. Second, little research has explored associations among coping strategies and PTSD symptom clusters (versus overall symptoms), despite evidence to suggest that PTSD is best understood as a dimensional construct (Broman-Fulks et al., 2006). Finally, research exploring the role of race/ethnicity in the relations among coping strategies and health outcomes among IPV-victimized women in particular is limited. Given evidence to suggest that the outcomes associated with some coping strategies (e.g., problem solving) differ across IPV and non-IPV samples, findings to inform community-based interventions for IPV-exposed women must be conducted with these women.

Consistent with past research, we expected African American (versus Latina and White) IPV-victimized women to report greater use of social support, problem solving, and avoidance coping strategies and White (versus African American and Latina) IPV-victimized women to report higher PTSD symptom cluster scores. No *a priori* hypotheses were made regarding the moderating role of race/ethnicity in the relations among coping strategies and

PTSD symptom clusters given limited literature in this population focused on these relations.

Method

Procedure and Participants

Data were collected as part of a larger study examining women's use of aggression in heterosexual relationships. All procedures were reviewed and approved by the authors' Institutional Review Board. Recruitment materials were posted in multiple community locations (e.g., health care clinics, churches, grocery stores). Eligibility was determined via a phone-screen and based on the following inclusion criteria: (a) female sex, (b) current involvement in a heterosexual intimate relationship of at least six months duration, (c) a woman's commission of at least one act of physical aggression against her male partner within the past six months, (d) age 18 to 65, (e) residency in the greater urban area, and (f) household income of less than \$50,000 (determined a priori to methodologically control for the differential resources associated with higher income).

Women who met the screening criteria were interviewed individually by female interviewers of the same race/ethnicity. Latina participants were interviewed by a bilingual/bicultural interviewer and had the option of being interviewed in Spanish. Following informed consent, participants completed a semi-structured, computer-assisted interview administered by trained master- or doctoral-level female research associates or postdoctoral fellows in private offices to protect participants' safety and confidentiality. After completion of the interview, participants were debriefed, remunerated \$50, and provided with a list of community resources.

A total of 412 women were recruited for the larger study. Almost all of these women (90%) reported experiences of physical victimization by a current male partner in the past six months. Thus, to enhance the representativeness of the sample used in the present analyses, only women who reported bidirectional aggression with a current male partner in the past six months were included in the current study. Participants were 369 community women. Women ranged in age from 18 to 65 ($M_{age} = 36.67$, $SD = 8.95$). In terms of racial/ethnic background, 36% of participants ($n = 134$) identified as African American, 36% ($n = 131$) as Latina, and 28% ($n = 104$) as White. Most women were unemployed for over a month prior to the study ($N = 241$, 65%); 21% ($n = 76$) were employed part-time; and 14% ($n = 52$) were employed full-time during this same time period. Mean level of education was 12.44 years ($SD = 2.30$); 28% of the women ($n = 103$) did not complete high school, 40% ($n = 148$) completed a high school degree or equivalent, and 32% ($n = 118$) reported some vocational or college experiences. Forty four percent of women ($n = 161$) reported a yearly family income of less than \$10,000, 28% ($n = 104$) reported between \$10,000 and \$19,999, 16% ($n = 60$) between \$20,000 and \$29,999, 7% ($n = 27$) between \$30,000 and \$39,999, and 5% ($n = 17$) between \$40,000 and \$49,999. Over half of the participants were living with their partner ($N = 225$, 61%), and most reported seeing their partner on a daily basis ($N = 308$, 84%). Mean years in the current relationship was 7.97 ($SD = 6.74$).

Measures

Coping strategies—The *Coping Strategies Indicator* (CSI; Amirkhan, 1990) is a 33-item self-report measure that was adapted to assess individuals' typical levels of coping with conflict in a current intimate relationship across three domains: social support (e.g., “confided fears and worries to a friend or a relative”), problem-solving (e.g., “brainstormed all possible solutions before deciding what to do”), and avoidance (e.g., “tried to distract yourself from the problem”) coping. To reduce participant burden, coping items were removed if they did not enhance the internal consistency of their respective subscales. Only the avoidance coping subscale was administered in full (11 items); 6 and 8 items were administered that assessed social support and problem-solving coping subscales, respectively. To orient participants to coping strategies they used to deal with recent conflict in their current intimate relationships, they were instructed to describe a conflict with their intimate partner that was important to them and caused them to worry. Participants were asked to rate each item using a 3-point Likert-type scale (1 = *not at all*, 3 = *a lot*). The CSI demonstrates adequate psychometric properties (Amirkhan, 1990, 1994). Cronbach's α s in the current study were .88 for social support, .82 for problem-solving, and .70 for avoidance coping.

Posttraumatic stress symptom cluster severity—PTSD symptom cluster scores were measured using an adapted version of the *Posttraumatic Stress Diagnostic Scale* (PDS) (Foa, Cashman, Jaycox, & Perry, 1997). Items assess the presence of intrusion (e.g., “How often have you had bad dreams or nightmares about violent or abusive events with your partner?”), avoidance (e.g., “How often have you tried not to think about, talk about, or have feelings about the violent or abusive events with your partner?”), numbing (e.g., “How often have you felt distant or cut off from people around you?”), and hyperarousal symptoms (e.g., “How often have you been overly alert?”). The intrusion, avoidance, numbing, and arousal symptom clusters are composed of 5, 2, 5, and 5 items, respectively, which are summed to create PTSD symptom cluster scores. To the extent possible, symptom severity was assessed in relation to victimization by the current male partner. Participants were asked to rate each item using a 4-point Likert-type scale (0 = *not at all, or only one time*; 3 = *5 or more times a week, or almost always*). The PDS demonstrates adequate psychometric properties (Foa et al., 1997). Cronbach's α s in the current study were .84 for intrusion, .71 for avoidance, .76 for numbing, and .76 for arousal symptom clusters.

Intimate partner physical victimization—Physical IPV victimization was measured by the *Revised Conflict Tactics Scale* (CTS-2) (Straus, Hamby, & Warren, 2003). A referent time period of six months was used. Response options for all scales were coded as: 0 (never), 1 (once in the past 6 months), 2 (twice in the past 6 months), 4 (3–5 times in the past 6 months), 8 (6–10 times in the past 6 months), 11 (more than 10 times in the past 6 months), and 0 (not in the past 6 months but it happened before). The category “not in the past 6 months but it happened before” was recoded as 0 to limit the assessment to occurrences in the past 6 months. The 12 physical victimization items were summed to create a total physical victimization score. Cronbach's α was .89 for the physical victimization score.

Demographic and relationship characteristics—All participants reported demographic (i.e., age, past-year income, employment, education) and relationship (i.e., living with partner, mean days of face-to-face contact, mean years in the relationship, physical victimization) characteristics. These were examined as potential covariates.

Data Analysis—As recommended by Tabachnick and Fidell (2007) study variables were assessed for assumptions of normality and multicollinearity. To identify potential covariates, analyses of variance (ANOVAs) and Pearson product-moment correlations were calculated to explore the impact of demographic and relationship characteristics on the PTSD symptom clusters. Descriptive statistics and Pearson product-moment and partial correlations were conducted to examine intercorrelations among the primary study variables in the full sample. Further, a series of analyses of covariance (ANCOVA) were calculated to identify racial/ethnic differences in the primary study variables.

Following this, multigroup path analysis using structural equation modeling (SEM) was utilized to test whether race/ethnicity moderates the associations among coping strategies and PTSD symptom clusters. AMOS 20.0 (SPSS, 2011), which uses Full Information Maximum Likelihood to address missing data, was employed to test the path models, obtain maximum-likelihood estimates of model parameters, and provide goodness-of-fit indices (Peters & Enders, 2002). Full information maximum likelihood estimation is robust against violations of normality (Bollen, 1989). Standard measures including χ^2 , normed fit index (NFI), Tucker-Lewis index (TLI), comparative fit index (CFI), root mean square error of approximation (RMSEA), and p of the close fit (PCLOSE) were used to assess model fit. A nonsignificant χ^2 , values of NFI, TLI, and CFI $\geq .90$, lower RMSEA values ($<.05$), and higher PCLOSE values ($>.05$), are considered indicators of good model fit (Browne & Cudeck, 1992; Hu & Bentler, 1999; Lei & Wu, 2007).

Exogenous variables measuring both coping strategies and PTSD symptom clusters were correlated. Identified covariates were correlated with PTSD symptom clusters. Consistent with recommendations set forth by Kline (2005), to obtain the most parsimonious model, (a) the initial model, with no cross-group equality constraints imposed, was modified by a one-by-one addition of cross-group equality constraints; (b) then, this alternative model was compared to the previous model (initial model or model with an additional constraint imposed). A chi-square difference statistic was calculated to compare the fit of the unconstrained and constrained models. Pairwise parameter comparisons were conducted to examine racial/ethnic differences in the paths among the primary study variables.

Results

Preliminary Analyses

ANOVAs and Pearson product-moment correlations revealed that past-year income was negatively related to intrusion symptoms ($F[4, 367] = 3.17, p = .01$); employment was negatively related to numbing ($F[4, 367] = 3.50, p = .01$) and arousal ($F[4, 367] = 6.03, p < .001$) symptoms; living with partner was positively related to intrusion, avoidance, and numbing symptoms ($F_s [1, 367]$ ranging from 4.42 to 12.50, p_s ranging from .04 to $< .001$); mean days of face-to-face contact was positively related to intrusion and numbing symptoms

(*r*s ranging from .13 to .17, *p*s ranging from .02 to .001); and physical victimization was positively related to all symptom clusters (*r*s ranging from .30 to .44, *p*s < .001). As such, past-year income, employment, living with partner, mean days of face-to-face contact, and physical victimization were included as covariates in subsequent analyses.

Descriptive data and zero-order and partial correlations for the full sample are reported in Table 1. Social support coping was positively related to arousal symptoms at zero-order, but not when controlling for relevant demographic and relationship characteristics; problem-solving coping was not related to any of the symptom clusters; and avoidance coping was positively related to all of the symptom clusters at zero-order and when controlling for relevant demographic and relationship characteristics.

ANCOVAs examining racial/ethnic differences in the primary study variables controlling for relevant demographic and relationship characteristics are presented in Table 2. Problem-solving and avoidance coping differed as a function of race/ethnicity. African Americans reported significantly greater levels of problem-solving coping ($M = 20.16$, $SD = 3.18$) than Latinas ($M = 18.58$, $SD = 3.75$; $F[1, 265] = 12.04$, $p = .001$, $\eta_p^2 = .05$) and avoidance coping ($M = 24.93$, $SD = 4.18$) compared to Latinas ($M = 22.18$, $SD = 4.37$; $F[1, 265] = 15.40$, $p < .001$, $\eta_p^2 = .06$) and Whites ($M = 22.56$, $SD = 3.98$; $F[1, 238] = 13.99$, $p < .001$, $\eta_p^2 = .06$). Racial/ethnic differences also were found for intrusion, avoidance, and numbing symptoms. Latinas reported greater severity of intrusion symptoms ($M = 5.09$, $SD = 3.23$) than African Americans ($M = 4.75$, $SD = 3.56$; $F[1, 265] = 6.95$, $p = .01$, $\eta_p^2 = .03$) and Whites ($M = 3.59$, $SD = 4.10$; $F[1, 234] = 15.89$, $p < .001$, $\eta_p^2 = .07$). Latinas reported greater severity of avoidance symptoms ($M = 2.86$, $SD = 1.71$) than African Americans ($M = 2.47$, $SD = 2.08$; $F[1, 265] = 8.08$, $p = .01$, $\eta_p^2 = .03$) and Whites ($M = 2.11$, $SD = 2.17$; $F[1, 234] = 11.94$, $p = .001$, $\eta_p^2 = .05$). Whites reported greater severity of numbing symptoms ($M = 5.41$, $SD = 3.99$) than Latinas ($M = 4.16$, $SD = 3.22$; $F[1, 234] = 5.68$, $p = .02$, $\eta_p^2 = .02$).

Primary Analyses

Multigroup path analysis was conducted to explore the potential moderating role of race/ethnicity in a model that simultaneously examines the relations among each of the coping strategies and each of the PTSD symptom clusters. African Americans, Latinas, and Whites did not differ from one another regarding the paths between social support coping and intrusion and numbing symptoms and problem-solving coping and intrusion, avoidance, and numbing symptoms. As a result, cross-group equality constraints were imposed across the groups for each of these parameters. Identified covariates were added to the final model. With the constraints imposed and covariates included, the final model provided a good fit to the data, $\chi^2(78, N = 369) = 114.54$, $p = .004$, NFI = .90, TLI = .90, CFI = .96, RMSEA = .04, PCLOSE = .96. A significant chi-square difference, $\chi^2(14) = 29.86$, $p = .008$, indicated that the alternative model, with cross-group equality constraints imposed, was superior to the initial, unconstrained model and thus preferred as the final model.

See Table 3 for parameter estimates for the final model. Standardized regression weights for the coping strategy-PTSD symptom associations included in the final model are presented separately for African American, Latina, and White women in columns 2 through 4. An

asterisk indicates that the association was significant for the identified racial/ethnic group. Comparisons of the standardized regression weights (i.e., z-scores) across the racial/ethnic groups (i.e., African American vs. Latina, African American vs. White, and Latina vs. White) are presented in Columns 5 through 7. An asterisk indicates that the standardized regression weights for the identified racial/ethnic groups were significantly different from one another. Below we summarize these findings separately for each of the coping strategies.

Racial/ethnic differences in the relations among social support coping and PTSD symptom clusters—Social support coping was not related to any of the symptom clusters for African Americans, however, it was positively related to arousal symptoms for Latinas and Whites (see Table 3). Racial/ethnic comparisons (i.e., z-scores) indicate that the path between social support coping and arousal symptoms was significantly different for African Americans compared to both Latinas and Whites, such that a stronger positive relation was found for Latinas and Whites compared to African Americans.

Racial/ethnic differences in the relations among problem-solving coping and PTSD symptom clusters—Problem-solving coping was negatively related to arousal symptoms for Latinas (see Table 3). Racial/ethnic comparisons (i.e., z-scores) indicate that the path between problem-solving coping and arousal symptoms was significantly different for African Americans compared to Latinas, such that a stronger negative relation was found for Latinas compared to African Americans.

Racial/ethnic differences in the relations among avoidance coping and PTSD symptom clusters—Avoidance coping was positively related to all of the symptom clusters for African Americans, intrusion and numbing symptoms for Latinas, and avoidance and numbing symptoms for Whites (see Table 3). Racial/ethnic comparisons (i.e., z-scores) indicate that the path between avoidance coping and (a) intrusion symptoms was significantly different for African Americans compared to both Latinas and Whites, such that a stronger positive relation was found for African Americans compared to Latinas and Whites; (b) avoidance symptoms was significantly different for African Americans compared to Latinas as well as Latinas compared to Whites, such that a stronger positive relation was found for African Americans compared to Latinas and Whites compared to Latinas; (c) arousal symptoms was significantly different for African Americans compared to both Latinas and Whites, such that a stronger positive relation was found for African Americans compared to Latinas and Whites.

Discussion

Research underscores racial/ethnic differences in women's experiences of IPV and related PTSD symptoms (Caetano et al., 2000; 2012; Hirth & Berenson, 2012). Moreover, past studies suggest that coping strategies – implicated in the etiology of PTSD symptoms (Brewin et al., 2000; Ozer et al., 2003) – and their health outcomes differ as a function of race/ethnicity (Aldridge-Gerry et al., 2011; Richman et al., 2011). The goal of the current study was to extend existing literature by examining whether race/ethnicity moderates the relations between specific coping strategies and PTSD symptom clusters in a community sample of IPV-victimized women in relationships with bidirectional violence. Findings

provide support for racial/ethnic differences in coping strategies, PTSD symptom clusters, and their relations, underscoring the need for culturally-informed PTSD treatments for this population.

There were several noteworthy between-group (African American versus Latina versus White) differences in coping strategies and PTSD symptom clusters. As expected, African American IPV-victimized women reported more frequent use of problem-solving and avoidance coping strategies than their Latina and White counterparts. This finding is consistent with research in non-IPV samples (Plummer & Slane, 1996), and suggests that African American IPV-victimized women utilize high levels of generally adaptive and maladaptive coping strategies. Recent findings indicate that using high levels of both adaptive and maladaptive coping strategies may be problematic. For instance, Dixon-Gordon, Aldao, and De Los Reyes (2015) found higher levels of psychopathology symptoms in a latent class characterized by higher use of both adaptive and maladaptive emotion regulation strategies than in classes defined by high use of either adaptive or maladaptive emotion regulation strategies. Likewise, greater use of adaptive emotion regulation strategies has been shown to be related to more psychopathology symptoms when individuals also report high use of maladaptive emotion regulation strategies (Aldao & Nolen-Hoeksema, 2012). Future research utilizing person-centered approaches, such as latent class or profile analysis, are needed to better understand the heterogeneity of IPV-victimized women's repertoire of coping strategies, as well as how classes characterized by different levels of coping strategies relate to PTSD symptoms in this population. Moreover, micro-longitudinal studies may improve our understanding of the immediate health consequences of adaptive and maladaptive coping strategies when used independently and concurrently in the real world. Nonetheless, the broader research suggests that interventions aimed at increasing protective factors may be less effective if they do not also implement strategies to reduce maladaptive strategies.

Partially consistent with our hypotheses, results provide support for greater intrusion and avoidance symptoms among Latinas (versus African Americans and Whites), and greater numbing symptoms among Whites (versus Latinas). Although no study (to our knowledge) has explored racial/ethnic differences in the specific PTSD symptom clusters among IPV-victimized women, five studies have examined whether overall PTSD symptoms vary as a function of race/ethnicity; racial/ethnic differences in PTSD symptoms were detected in three of these studies, with researchers finding higher PTSD symptoms among IPV-victimized White (versus African American and Latina) women (Hirth & Berenson, 2012; Lilly & Graham-Bermann, 2009; Wright et al., 2010). One explanation for these divergent findings may be that aggregating PTSD symptom clusters obscures findings. Said otherwise, White IPV-victimized women in previous studies, while endorsing higher rates of overall PTSD symptoms compared to other racial/ethnic groups, may only have exhibited higher levels of specific symptom clusters, and may even have exhibited lower levels of other symptom clusters. Alternatively, only one of the aforementioned studies included a Latina comparison group (Hirth & Berenson, 2012), and women in that study were from the western United States, which may represent a different population of IPV-exposed Latinas than the women of the current study. Although usually classified as a single ethnic group by researchers, Latinas are heterogeneous; representing various national origins that each have

their own culture (González Burchard et al., 2005). Thus, it is possible that levels of PTSD symptoms differ within Latina IPV-victimized women as a function of national origin, as has been found to be the case with other health outcomes (Delva et al., 2005; Weinick, Jacobs, Stone, Ortega, & Burstin, 2004). Although our findings are partially consistent with the broader theory and research in this area that underscores greater PTSD symptoms among racial/ethnic minorities (e.g., Breslau et al., 1998; Brewin et al., 2000; Frueh et al., 1998; Perilla et al., 2002; Roberts et al., 2011), future research is warranted to better understand the discrepant findings regarding these relations in IPV samples in particular. Pole, Best, Metzler, and Marmar (2005) identified six factors that may explain why Latinas experience greater PTSD symptoms compared to African Americans and Whites: (1) overreporting of distress, (2) more frequent and/or severe exposure to trauma, (3) greater peritraumatic dissociation (dissociative symptoms are common among culturally-specific mental health conditions identified in Latin America; Escobar, 1995), (4) more maladaptive posttrauma coping (e.g., less problem-solving), (5) posttrauma social context (e.g., reduced access to social support, greater perceived racism), and (6) comorbid psychiatric syndromes (e.g., greater somatization and general psychiatric distress). Studies are needed to explore the potential role of these factors in the racial/ethnic differences in PTSD symptom clusters among IPV-victimized women.

A key finding of the current study with important implications for both research and practice was that race/ethnicity moderated the relations among coping strategies and PTSD symptom clusters. Indeed, the strength and direction of these relations varied dramatically across African American, Latina, and White IPV-victimized women. For instance, in the total sample, more social support coping was related to greater arousal symptoms, however, among the specific racial/ethnic groups, this association was only significant for Whites and Latinas. The consequences of social support coping may be impacted by social support's negative and/or positive reactions (Sullivan et al., 2010). There is evidence to suggest that African American women are less likely to disclose IPV to informal supports than Whites (Kaukinen, 2004) or Latinas (Yoshioka, Gilbert, El-Bassel, & Braig-Amin, 2003). As such, Latina and White (vs. African American) women's social supports may have greater opportunities to respond negatively (e.g., display less sympathy, minimize the severity of the problem, avoid or change the topic; Mitchell & Hodson, 1983), which may result in more negative consequences for social support coping (e.g., greater PTSD symptoms) among these women. Indeed, social support's use of avoidance responses to women's disclosures of IPV have been found to result in greater stress symptoms (Mitchell & Hodson, 1983). More nuanced studies are needed to explore racial/ethnic differences in the specific aspects of social support (e.g., negative and positive reactions, as well as types of social support [e.g., instrumental, informational, and emotional]) and their outcomes among IPV-victimized women.

Likewise, problem solving coping was not related to any of the symptom clusters in the total sample, yet, greater problem-solving coping for Latinas was associated with fewer arousal symptoms compared to African Americans and Whites. There may be qualitative differences in how problem solving occurs among the different racial/ethnic groups. IPV-victimized Latina (vs. White) women are twice as likely to indicate that their relationships are male-dominated (West, Kantor, & Jasinski, 1998). Extant research indicates that traditional gender

role attitudes may be especially relevant to IPV among Latinas (Campbell, Masaki, & Torres, 1997). Because Latinas (vs. Whites) who exhibit behaviors that are inconsistent with traditional gender role norms are more likely to experience IPV (Torres, 1991), IPV-victimized Latinas may be more likely to utilize gender-role consistent problem-solving (e.g., agreeing with their partners solutions, offering solutions they know will please their partner) to reduce relational conflict. Indeed, there is evidence to suggest that Latinas are more interdependent, family-centered, and cooperative in their styles of coping than their White counterparts (Diaz-Guerrero, 1987). Future research would benefit from exploring the aforementioned hypotheses. In particular, studies should identify the role of gender-role strain, such as that stemming from acculturation, in the relation between problem-solving coping and PTSD symptoms among IPV-victimized Latinas.

Avoidance coping was found to be positively related to each of the symptom clusters in the total sample. However, subsequent analyses indicated that this type of coping was positively related to all of the symptom clusters only for African Americans; it was positively related only to intrusion and numbing symptoms for Latinas and avoidance and numbing symptoms for Whites. Further, the strength of the relations among avoidance coping and PTSD symptom clusters was considerably stronger for African Americans than for Latinas and Whites. Extant research has found that African Americans are more likely to use avoidance than problem-solving or social support (Utsey et al., 2000), and studies of racial/ethnic differences in coping indicate that African Americans utilize avoidance more often than their White counterparts (Rodrigue, 1997). Indeed, literature suggests that African Americans are socialized in ways that generate greater emotional restriction and repression (Consedine et al., 2004) and less emotional expression (Brantley et al., 2002). The stereotype of the African American woman as “Black Superwoman” may explain why some African American women come to rely on avoidance coping (Bell & Mattis, 2000). While positive, this representation may lead African American women to believe that they should be able to successfully cope with any stressor they are confronted with, and women who internalize this stereotype may be more likely to avoid, minimize, or deny experiences that contradict this image (Bell & Mattis, 2000), such as distress stemming from relational conflict. Notably, while avoidance coping may temporarily minimize such distress, it has paradoxical long-term consequences, exacerbating IPV-related distress and negative outcomes. Regarding traumatic exposure in particular, avoidance coping has been theorized to interfere with several processes that reduce risk for PTSD following trauma exposure, including the processing of traumatic memories, habituation to aversive emotions associated with trauma memories, and extinction of trauma-related fear responses (Foa & Kozak, 1986). Investigations are needed to better understand why higher levels of avoidance coping were associated with worse outcomes among IPV-victimized African American women. For instance, there is some research to suggest that race-related stressors (e.g., discrimination) may compound the impact of traumatic exposure (La Greca, Silverman, Vernberg, & Prinstein, 1996). Alternatively, because our measure of avoidance coping does not differentiate between the various functions avoidance may serve (i.e., permanent or temporary redirection away from emotions), it is possible that IPV-victimized African American women in our sample were relying more on maladaptive forms of avoidance coping than their Latina and White counterparts.

Of note, the current study was designed to be a preliminary test of the role of race/ethnicity in the relations among coping strategies and PTSD symptom clusters. Future research is needed to better understand *why* race/ethnicity moderates these associations. Investigation of the role of culturally-relevant factors (e.g., acculturation, racial socialization, ethnic identity, race-related stress) in the relations among the study variables is of particular importance. Nonetheless, these aforementioned findings suggest that aggregating across race/ethnicity in research studies may obscure relations, underscoring the need for (1) recruiting individuals from racially/ethnically diverse groups into research studies and (2) investigating the potentially moderating role of race/ethnicity in the relations of interest. Indeed, the generalizability of findings from studies that do not meet these aforementioned criteria may be limited, and, in fact, may advocate for inappropriate treatment targets.

Regarding the clinical implications of the current study, our results stress the need for developing culturally-informed PTSD treatments that are tailored to the unique needs of IPV-victimized women from diverse racial/ethnic groups. Relatively few PTSD treatments exist for IPV-victimized women (Warshaw, Sullivan, & Rivera, 2013), and given that most (> 90%) IPV-victimized women experience repeated victimization by their intimate partner (Cattaneo & Goodman, 2005), PTSD treatments that incorporate prolonged exposure may be contraindicated or deleterious for this population (Foa, Hembree, & Rothbaum, 2007; Warshaw et al., 2013). Although preliminary, our results highlight the potential utility of targeting specific coping strategies in reducing PTSD symptoms among IPV-victimized women from specific racial/ethnic groups. For instance, whereas past research provides support for a weak or negative relation between problem solving coping and PTSD symptoms among IPV-victimized women (Arias & Pape, 1999; Kocot & Goodman, 2003), the current study revealed that problem solving coping served a protective role for Latinas, suggesting the potential utility of targeting this coping strategy in treatments for Latina IPV-victimized women. Likewise, our results suggest that social support coping may be less helpful for White and Latina IPV-victimized women. IPV disclosure may be less socially acceptable in communities where Latina and White women are most likely to reside. As such, Latina and White women's disclosures of victimization may be associated with greater negative social reactions – one factor found to relate to IPV-victimized women's well-being (Coker et al., 2002; Goodkind, Gillum, Bybee, & Sullivan, 2003). Treatments for IPV-victimized Latina and White women may benefit from teaching appropriate social disclosures as well as strategies for managing negative social reactions. Likewise, public awareness campaigns may be used to teach people the effective ways of reacting to women when they disclose IPV victimization. In addition, this study underscores the need for teaching all IPV-victimized women, but especially African American IPV-victimized women, strategies to replace avoidance coping, such as emotional approach and distraction (Gratz & Gunderson, 2006). Indeed, avoidance coping demonstrated the strongest relations with PTSD symptom clusters compared to other coping strategies. Finally, generally adaptive coping strategies were not protective against PTSD symptoms among African American and White women in the current study. This underscores the need for research to identify or develop adaptive and effective strategies to replace maladaptive strategies (e.g., avoidance coping) for managing symptoms of PTSD among these women in particular.

Although findings of the present study add to the growing body of research on the role of race/ethnicity in coping strategies, PTSD symptoms, and their relations among IPV-victimized community women, limitations are noteworthy. First, the cross-sectional and correlational nature of the data precludes determination of the precise nature and direction of the relations of interest. For instance, although research suggests that coping strategies underlie the development, maintenance, and/or exacerbation of PTSD symptoms, it is likely that this association is bidirectional, with heightened PTSD symptoms leading to greater coping efforts. Future studies should address this concern through prospective, longitudinal investigations. Second, our measure of PTSD symptoms was based on the *DSM-IV* classification of PTSD. Thus, research is needed to replicate these findings using *DSM-5* guidelines for the assessment of PTSD. Third, coping strategies in the current study were assessed in relation to conflict with a current intimate partner. Future studies would benefit from examining racial/ethnic differences in coping strategies for other stressors that have been found to exacerbate PTSD symptoms (e.g., race-related stressors; Khaylis, Waelde, & Bruce, 2007; Loo, Fairbank, & Chemtob, 2005). Fourth, although our focus on African American, Latina, and White IPV-victimized community women may be considered a strength of this study, our findings cannot be assumed to generalize to other IPV populations (e.g., men, women in bi-/homo-sexual relationships). Further, research is needed to examine the relations among coping strategies and PTSD symptoms in racial/ethnic groups not represented here (e.g., American Indians/Alaska Natives, Asians, Native Hawaiians/Pacific Islanders). On similar lines, racial/ethnic status categorization does not entirely capture the cultural complexity of the different cultural groups. Thus it would be helpful to assess the current study questions using other culturally embedded variables. Finally, because our sample was characterized by physical violence in an intimate relationship, physical victimization was included as a covariate in all of the study analyses. Future research is needed to examine the role of other forms of victimization (e.g., psychological, sexual) in the study relations given their associations with coping and PTSD (e.g., Basile, Arias, Desai, & Thompson, 2004; Sullivan et al., 2010).

Despite limitations, findings of this study improve our understanding of the associations among coping strategies and PTSD symptom clusters in African American, Latina, and White IPV-victimized community women. Results suggest the potential utility of teaching African American, Latina, and White IPV-victimized women strategies to replace avoidance coping; teaching strategies for enhancing problem-solving may benefit Latina IPV-victimized women, whereas teaching appropriate social disclosures and strategies for managing negative social reactions may be helpful for Latina and White IPV-victimized women. It will be important for future research to explicate potential racial/ethnic differences in the relation between coping strategies and other clinically-relevant outcomes (e.g., depressive symptoms, substance use, and women's safety). For instance, although social support was not found to confer benefits in reducing PTSD symptoms, it may positively impact IPV-victimized women in other important ways, such as insuring their safety.

Acknowledgments

The research described here was supported, in part, by grants from the National Institutes of Health (T32DA019426; T32MH020031). This research also was supported by Grant No. 2001-WT-BX-0502 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect those of the Department of Justice.

References

- Aldao A, Nolen-Hoeksema S. When are adaptive strategies most predictive of psychopathology? *Journal of Abnormal Psychology*. 2012; 121:276–281. [PubMed: 21553934]
- Aldridge-Gerry AA, Roesch SC, Villodas F, McCabe C, Leung QK, Da Costa M. Daily stress and alcohol consumption: Modeling between-person and within-person ethnic variation in coping behavior. *Journal of Studies on Alcohol and Drugs*. 2011; 72:125–134. [PubMed: 21138719]
- Amirkhan JH. A factor analytically derived measure of coping: The coping strategy indicator. *Journal of Personality and Social Psychology*. 1990; 59:1066–1074.
- Amirkhan JH. Criterion validity of a coping measure. *Journal of Personality Assessment*. 1994; 62:242–261. [PubMed: 8189334]
- Arias I, Pape KT. Psychological abuse: Implications for adjustment and commitment to leave violent partners. *Violence and Victims*. 1999; 14:55–67. [PubMed: 10397626]
- Basile KC, Arias I, Desai S, Thompson MP. The differential association of intimate partner physical, sexual, psychological, and stalking violence and posttraumatic stress symptoms in a nationally representative sample of women. *Journal of Traumatic Stress*. 2004; 17:413–421. [PubMed: 15633920]
- Bell CC, Mattis J. The importance of cultural competence in ministering to African American victims of domestic violence. *Violence Against Women*. 2000; 6:515–532.
- Benotsch EG, Brailey K, Vasterling JJ, Uddo M, Constans JI, Sutker PB. War zone stress, personal and environmental resources, and PTSD symptoms in Gulf War veterans: A longitudinal perspective. *Journal of Abnormal Psychology*. 2000; 109:205–213. [PubMed: 10895558]
- Black, MC., Basile, KC., Breiding, MJ., Smith, SG., Walters, ML., Merrick, MT., November, MRS. National intimate partner and sexual violence survey. Atlanta, GA: Centers for Disease Control, National Center for Injury Prevention and Control, Division of Violence Prevention; 2011.
- Bollen KA. A new incremental fit index for general structural equation models. *Sociological Methods & Research*. 1989; 17:303–316.
- Brantley PJ, O'hea EL, Jones G, Mehan DJ. The influence of income level and ethnicity on coping strategies. *Journal of Psychopathology and Behavioral Assessment*. 2002; 24:39–45.
- Breslau N, Kessler RC, Chilcoat HD, Schultz LR, Davis GC, Andreski P. Trauma and posttraumatic stress disorder in the community: The 1996 Detroit Area Survey of Trauma. *Archives of General Psychiatry*. 1998; 55:626–632. [PubMed: 9672053]
- Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*. 2000; 68:748–766. [PubMed: 11068961]
- Broman-Fulks JJ, Ruggiero KJ, Green BA, Kilpatrick DG, Danielson CK, Resnick HS, Saunders BE. Taxometric investigation of PTSD: Data from two nationally representative samples. *Behavior Therapy*. 2006; 37:364–380. [PubMed: 17071214]
- Browne MW, Cudeck R. Alternative ways of assessing model fit. *Sociological Methods & Research*. 1992; 21:230–258.
- Caetano R, Cunradi CB, Schafer J, Clark CL. Intimate partner violence and drinking patterns among White, Black, and Hispanic couples in the US. *Journal of Substance Abuse*. 2000; 11:123–138. [PubMed: 10989773]
- Caetano R, Schafer J, Cunradi CB. Alcohol-related intimate partner violence among White, Black, and Hispanic couples in the United States. *Alcohol Research and Health*. 2001; 25:58–65. [PubMed: 11496968]

- Campbell, DW., Masaki, B., Torres, S. "Water on rock": Changing domestic violence perceptions in the African American, Asian American, and Latino communities. In: Klein, E.Campbell, J.Soler, E., Ghez, M., editors. Ending domestic violence: Changing public perceptions/halting the epidemic. Thousand Oaks, CA: Sage; 1997. p. 64-87.
- Carlier IV, Lamberts RD, Gersons BP. Risk factors for posttraumatic stress symptomatology in police officers: A prospective analysis. *The Journal of Nervous and Mental Disease*. 1997; 185:498–506. [PubMed: 9284863]
- Cattaneo LB, Goodman LA. Risk factors for reabuse in intimate partner violence: A cross-disciplinary critical review. *Trauma, Violence, & Abuse*. 2005; 6:141–175.
- Chapman PL, Mullis RL. Racial differences in adolescent coping and self-esteem. *The Journal of Genetic Psychology*. 2000; 161:152–160. [PubMed: 10851678]
- Coker AL, Smith PH, Bethea L, King MR, McKeown RE. Physical health consequences of physical and psychological intimate partner violence. *Archives of Family Medicine*. 2000; 9:451–457. [PubMed: 10810951]
- 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 & Gender-Based Medicine*. 2002; 11:465–476.
- Coker AL, Watkins KW, Smith PH, Brandt HM. Social support reduces the impact of partner violence on health: Application of structural equation models. *Preventive Medicine*. 2003; 37:259–267. [PubMed: 12914832]
- Consedine NS, Magai C, Neugut AI. The contribution of emotional characteristics to breast cancer screening among women from six ethnic groups. *Preventive Medicine*. 2004; 38:64–77. [PubMed: 14672643]
- Delva J, Wallace JM Jr, O'Malley PM, Bachman JG, Johnston LD, Schulenberg JE. The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latin American eighth-grade students in the United States: 1991–2002. *American Journal of Public Health*. 2005; 95:696–702. [PubMed: 15798132]
- Diaz-Guerrero, R. Historical sociocultural premises and ethnic socialization. In: Phinney, JS., Rotheram, MJ., editors. *Children's ethnic socialization: Pluralism and development*. Newbury Park, CA: Sage; 1987. p. 239-250.
- Dirkzwager AJ, Bramsen I, van der Ploeg HM. Social support, coping, life events, and posttraumatic stress symptoms among former peacekeepers: A prospective study. *Personality and Individual Differences*. 2003; 34:1545–1559.
- Dixon-Gordon KL, Aldao A, De Los Reyes A. Emotion regulation in context: Examining the spontaneous use of strategies across emotional intensity and type of emotion. *Personality and Individual Differences*. 2015; 86:271–276.
- Douglas AN, Jimenez S, Lin H-J, Frisman LK. Ethnic differences in the effects of spiritual well-being on long-term psychological and behavioral outcomes within a sample of homeless women. *Cultural Diversity and Ethnic Minority Psychology*. 2008; 14:344–352. [PubMed: 18954170]
- El-Khoury MY, Dutton MA, Goodman LA, Engel L, Belamaric RJ, Murphy M. Ethnic differences in battered women's formal help-seeking strategies: A focus on health, mental health, and spirituality. *Cultural Diversity and Ethnic Minority Psychology*. 2004; 10:383–393. [PubMed: 15554800]
- Foa EB, Cashman L, Jaycox L, Perry K. The validation of a self-report measure of posttraumatic stress disorder: The Posttraumatic Diagnostic Scale. *Psychological Assessment*. 1997; 9:445–451.
- Foa, EB., Hembree, E., Rothbaum, BO. *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences*. New York, NY: Oxford University Press; 2007.
- Foa EB, Kozak MJ. Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*. 1986; 99:20–35. [PubMed: 2871574]
- Follingstad DR, Brennan AF, Hause ES, Polek DS, Rutledge LL. Factors moderating physical and psychological symptoms of battered women. *Journal of Family Violence*. 1991; 6:81–95.
- Ford JD. Ethnoracial and educational differences in victimization history, trauma-related symptoms, and coping style. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2012; 4:177–185.
- Frueh BC, Brady KL, de Arellano MA. Racial differences in combat-related PTSD: Empirical findings and conceptual issues. *Clinical Psychology Review*. 1998; 18:287–305. [PubMed: 9564582]

- Gil S, Caspi Y. Personality traits, coping style, and perceived threat as predictors of posttraumatic stress disorder after exposure to a terrorist attack: A prospective study. *Psychosomatic Medicine*. 2006; 68:904–909. [PubMed: 17079704]
- Golding JM. Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Violence Against Women*. 1999; 14:99–132.
- González Burchard E, Borrell LN, Choudhry S, Naqvi M, Tsai HJ, Rodriguez-Santana JR, Risch N. Latino populations: A unique opportunity for the study of race, genetics, and social environment in epidemiological research. *American Journal of Public Health*. 2005; 95:2161–2168. [PubMed: 16257940]
- Goodkind JR, Gillum TL, Bybee DI, Sullivan CM. The impact of family and friends' reactions on the well-being of women with abusive partners. *Violence Against Women*. 2003; 9:347–373.
- Gratz KL, Gunderson JG. Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with borderline personality disorder. *Behavior Therapy*. 2006; 37:25–35. [PubMed: 16942958]
- Hampton R, Oliver W, Magarian L. Domestic violence in the African American community: An analysis of social and structural factors. *Violence Against Women*. 2003; 9:533–557.
- Hellmuth JC, Jaquier V, Swan SC, Sullivan TP. Elucidating posttraumatic stress symptom profiles and their correlates among women experiencing bidirectional intimate partner violence. *Journal of Clinical Psychology*. 2014; 70:1008–1021. [PubMed: 24752965]
- Heron RL, Twomey HB, Jacobs DP, Kaslow NJ. Culturally competent interventions for abused and suicidal African American women. *Psychotherapy: Theory, Research, Practice, Training*. 1997; 34:410–424.
- Hirth JM, Berenson AB. Racial/ethnic differences in depressive symptoms among young women: The role of intimate partner violence, trauma, and posttraumatic stress disorder. *Journal of Women's Health*. 2012; 21:966–974.
- Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*. 1999; 6:1–55.
- Ingram EM. A comparison of help seeking between Latino and non-Latino victims of intimate partner violence. *Violence Against Women*. 2007; 13:159–171. [PubMed: 17251503]
- Kaukinen C. The help-seeking strategies of female violent-crime victims the direct and conditional effects of race and the victim-offender relationship. *Journal of Interpersonal Violence*. 2004; 19:967–990. [PubMed: 15296612]
- Keane TM, Scott WO, Chavoya GA, Lamparski DM, Fairbank JA. Social support in Vietnam veterans with posttraumatic stress disorder: A comparative analysis. *Journal of Consulting and Clinical Psychology*. 1985; 53:95–102. [PubMed: 3980835]
- Khaylis A, Waelde L, Bruce E. The role of ethnic identity in the relationship of race-related stress to ptsd symptoms among young adults. *Journal of Trauma & Dissociation*. 2007; 8:91–105. [PubMed: 18077286]
- Kline, RB. *Principles and practices of structural equation modeling*. 2nd. New York, NY: Guilford Press; 2005.
- Kocot T, Goodman L. The roles of coping and social support in battered women's mental health. *Violence Against Women*. 2003; 9:323–346.
- Koenig HG, George LK, Hays JC, Larson DB, Cohen HJ, Blazer DG. The relationship between religious activities and blood pressure in older adults. *The International Journal of Psychiatry in Medicine*. 1998; 28:189–213. [PubMed: 9724889]
- Kramer NM, Johnson NL, Johnson DM. Is John Henryism a resilience factor in women experiencing intimate partner violence? *Anxiety, Stress, & Coping*. 2015; 28:601–616.
- Krause ED, Kaltman S, Goodman LA, Dutton MA. Avoidant coping and PTSD symptoms related to domestic violence exposure: A longitudinal study. *Journal of Traumatic Stress*. 2008; 21:83–90. [PubMed: 18302182]
- La Greca AM, Silverman WK, Vernberg EM, Prinstein MJ. Symptoms of posttraumatic stress in children after Hurricane Andrew: A prospective study. *Journal of Consulting and Clinical Psychology*. 1996; 64:712–723. [PubMed: 8803361]

- Langhinrichsen-Rohling J, Selwyn C, Rohling ML. Rates of bidirectional versus unidirectional intimate partner violence across samples, sexual orientations, and race/ethnicities: A comprehensive review. *Partner Abuse*. 2012; 3:199–230.
- Lawrence JW, Fauerbach JA. Personality, coping, chronic stress, social support and ptsd symptoms among adult burn survivors: A path analysis. *Journal of Burn Care & Research*. 2003; 24:63–72.
- Lei PW, Wu Q. Introduction to structural equation modeling: Issues and practical considerations. *Educational Measurement: Issues and Practice*. 2007; 26:33–43.
- Lewis CS, Griffing S, Chu M, Jospire T, Sage RE, Madry L, Primm BJ. Coping and violence exposure as predictors of psychological functioning in domestic violence survivors. *Violence Against Women*. 2006; 12:340–354. [PubMed: 16567335]
- Lewis MJ, West B, Bautista L, Greenberg AM, Done-Perez I. Perceptions of service providers and community members on intimate partner violence within a Latino community. *Health Education and Behavior*. 2005; 32:69–83. [PubMed: 15642755]
- Lilly MM, Graham-Bermann SA. Ethnicity and risk for symptoms of posttraumatic stress following intimate partner violence prevalence and predictors in European American and African American women. *Journal of Interpersonal Violence*. 2009; 24:3–19. [PubMed: 18299418]
- Littleton H, Horsley S, John S, Nelson DV. Trauma coping strategies and psychological distress: A meta-analysis. *Journal of Traumatic Stress*. 2007; 20:977–988. [PubMed: 18157893]
- Loo CM, Fairbank JA, Chemtob CM. Adverse race-related events as a risk factor for posttraumatic stress disorder in Asian American Vietnam veterans. *The Journal of Nervous and Mental Disease*. 2005; 193:455–463. [PubMed: 15985840]
- Maton KI, Teti DM, Corns KM, Vieira-Baker CC, Lavine JR, Gouze KR, Keating DP. Cultural specificity of support sources, correlates and contexts: Three studies of African-American and Caucasian youth. *American Journal of Community Psychology*. 1996; 24:551–587. [PubMed: 8969449]
- Mellman TA, David D, Bustamante V, Fins AI, Esposito K. Predictors of post-traumatic stress disorder following severe injury. *Depression and Anxiety*. 2001; 14:226–231. [PubMed: 11754130]
- Mitchell RE, Hodson CA. Coping with domestic violence: Social support and psychological health among battered women. *American Journal of Community Psychology*. 1983; 11:629–654. [PubMed: 6666751]
- Musick MA, Koenig HG, Hays JC, Cohen HJ. Religious activity and depression among community-dwelling elderly persons with cancer: The moderating effect of race. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. 1998; 53:218–227.
- Ozer EJ, Best SR, Lipsey TL, Weiss DS. Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*. 2003; 129:52–73. [PubMed: 12555794]
- Perilla JL, Norris FH, Lavizzo EA. Ethnicity, culture, and disaster response: Identifying and explaining ethnic differences in PTSD six months after Hurricane Andrew. *Journal of Social and Clinical Psychology*. 2002; 21:20–45.
- Peters CLO, Enders C. A primer for the estimation of structural equation models in the presence of missing data: Maximum likelihood algorithms. *Journal of Targeting, Measurement and Analysis for Marketing*. 2002; 11:81–95.
- Plummer DL, Slane S. Patterns of coping in racially stressful situations. *Journal of Black Psychology*. 1996; 22:302–315.
- 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]
- Richman JA, Sohmer D, Rospenda KM, Shannon CA. Race/ethnicity, coping, and drinking outcomes. *Journal of Drug Issues*. 2011; 41:401–418.
- Roberts AL, Gilman SE, Breslau J, Breslau N, Koenen KC. Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*. 2011; 41:71–83. [PubMed: 20346193]
- Rodrigue JR. An examination of race differences in patients' psychological adjustment to cancer. *Journal of Clinical Psychology in Medical Settings*. 1997; 4:271–280.

- Sato RA, Heiby EM. Correlates of depressive symptoms among battered women. *Journal of Family Violence*. 1992; 7:229–245.
- Sharkansky EJ, King DW, King LA, Wolfe J, Erickson DJ, Stokes LR. Coping with gulf war combat stress: Mediating and moderating effects. *Journal of Abnormal Psychology*. 2000; 109:188–197. [PubMed: 10895556]
- Skinner EA, Edge K, Altman J, Sherwood H. Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*. 2003; 129:216–269. [PubMed: 12696840]
- Steffen PR, Hinderliter AL, Blumenthal JA, Sherwood A. Religious coping, ethnicity, and ambulatory blood pressure. *Psychosomatic Medicine*. 2001; 63:523–530. [PubMed: 11485105]
- Straus, MA., Hamby, SL., Warren, WL. *The conflict tactics scales handbook*. Los Angeles, CA: Western Psychological Services; 2003.
- Sullivan TP, Holt LJ. Ptsd symptom clusters are differentially related to substance use among community women exposed to intimate partner violence. *Journal of Traumatic Stress*. 2008; 21:173–180. [PubMed: 18404637]
- Sullivan TP, Schroeder JA, Dudley DN, Dixon JM. Do differing types of victimization and coping strategies influence the type of social reactions experienced by current victims of intimate partner violence? *Violence Against Women*. 2010; 16:638–657. [PubMed: 20445076]
- Tabachnick B, Fidell L. *Multivariate analysis of variance and covariance. Using multivariate statistics*. 2007; 3:402–407.
- Taft CT, Resick PA, Panuzio J, Vogt DS, Mechanic MB. Coping among victims of relationship abuse: A longitudinal examination. *Violence and Victims*. 2007; 22:408–418. [PubMed: 17691549]
- Tate DC, Van Den Berg JJ, Hansen NB, Kochman A, Sikkema KJ. Race, social support, and coping strategies among HIV-positive gay and bisexual men. *Culture, Health, & Sexuality*. 2006; 8:235–249.
- Torres S. A comparison of wife abuse between two cultures: Perceptions, attitudes, nature, and extent. *Issues in Mental Health Nursing*. 1991; 12:113–131. [PubMed: 1988377]
- United States Census Bureau. [Retrieved March 13, 2015] Resident population by race, hispanic origin, and age: 2000 and 2009. 2011. from <http://www.census.gov/compendia/statab/2012/tables/12s0010.pdf>
- Utsey SO, Ponterotto JG, Reynolds AL, Cancelli AA. Racial discrimination, coping, life satisfaction, and self-esteem among African Americans. *Journal of Counseling and Development*. 2000; 78:72–80.
- Valentiner DP, Holahan CJ, Moos RH. Social support, appraisals of event controllability, and coping: An integrative model. *Journal of Personality and Social Psychology*. 1994; 66:1094–1102.
- Vitaliano PP, DeWolfe DJ, Maiuro RD, Russo J, Katon W. Appraised changeability of a stressor as a modifier of the relationship between coping and depression: A test of the hypothesis of fit. *Journal of Personality and Social Psychology*. 1990; 59:582–592. [PubMed: 2231287]
- Warshaw, C., Sullivan, CM., Rivera, EA. A systematic review of trauma-focused interventions for domestic violence survivors. *National Center on Somestic Violence, Trauma, & Mental Health*; 2013. p. 1-26.
- Weinick RM, Jacobs EA, Stone LC, Ortega AN, Burstin H. Hispanic healthcare disparities: Challenging the myth of a monolithic Hispanic population. *Medical Care*. 2004; 42:313–320. [PubMed: 15076807]
- Weiss NH, Dixon-Gordon KL, Duke AA, Sullivan TP. The underlying role of posttraumatic stress disorder symptoms in the association between intimate partner violence and deliberate self-harm among African American women. *Comprehensive Psychiatry*. 2015; 59:8–16. [PubMed: 25752736]
- West CM, Kantor GK, Jasinski JL. Sociodemographic predictors and cultural barriers to help-seeking behavior by Latina and non-Latino White American battered women. *Violence and Victims*. 1998; 13:361–375. [PubMed: 10328444]
- Wright CV, Perez S, Johnson DM. The mediating role of empowerment for African American women experiencing intimate partner violence. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2010; 2:266–272.

Yoshioka MR, Gilbert L, El-Bassel N, Baig-Amin M. Social support and disclosure of abuse: Comparing South Asian, African American, and Hispanic battered women. *Journal of Family Violence*. 2003; 18:171–180.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 1
Descriptive Data and Interrelations among Coping Strategies and PTSD Symptom Clusters

	1	2	3	4	5	6	7
1. Social Support Coping	--	.25***	.03	.06	-.02	.03	.11*
2. Problem Solving Coping	.24***	--	.21***	.06	.03	.06	.02
3. Avoidance Coping	.01	.21***	--	.32***	.30***	.41***	.23***
4. Intrusion PTSD Symptoms	.03	.05	.20***	--	.61***	.56***	.54***
5. Avoidance PTSD Symptoms	-.04	.02	.21***	.54***	--	.50***	.48***
6. Numbing PTSD Symptoms	.002	.03	.33***	.48***	.43***	--	.60***
7. Arousal PTSD Symptoms	.10	.01	.14**	.47***	.42***	.56***	--
<i>M</i>	12.11	19.38	23.28	4.54	2.51	4.80	6.96
<i>SD</i>	3.52	3.63	4.37	3.65	2.00	3.66	3.79

Note. PTSD = Posttraumatic stress disorder. Zero-order correlations appear above the diagonal and partial correlations (controlling for past-year income, employment, living with partner [yes = 1, no = 0], mean days of face-to-face contact, and past six-month physical intimate partner violence victimization) appear below the diagonal.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Analyses of Covariance Examining Racial/Ethnic Differences in Coping Strategies and PTSD Symptom Clusters

	African American (n = 134) M (SD)	Latina (n = 131) M (SD)	White (n = 104) M (SD)	Test Statistic
Social Support Coping	12.65 (3.34) _a	11.67 (3.30) _{ab}	11.96 (3.95) _{abc}	$F(2, 369) = 2.07, p = .13, \eta_p^2 = .01$
Problem Solving Coping	20.16 (3.18) _a	18.58 (3.75) _b	19.37 (3.84) _{abc}	$F(2, 369) = 5.97, p = .003, \eta_p^2 = .03$
Avoidance Coping	24.93 (4.18) _a	22.18 (4.37) _b	22.56 (3.98) _{bc}	$F(2, 369) = 10.51, p < .001, \eta_p^2 = .06$
Intrusion PTSD Symptoms	4.75 (3.56) _a	5.07 (3.22) _b	3.59 (4.10) _{ac}	$F(2, 368) = 8.21, p < .001, \eta_p^2 = .04$
Avoidance PTSD Symptoms	2.47 (2.08) _a	2.86 (1.71) _b	2.11 (2.17) _{ac}	$F(2, 368) = 6.34, p = .002, \eta_p^2 = .03$
Numbing PTSD Symptoms	4.95 (3.73) _a	4.16 (3.22) _b	5.41 (3.99) _{ac}	$F(2, 368) = 3.17, p = .04, \eta_p^2 = .02$
Arousal PTSD Symptoms	6.98 (3.93) _a	6.92 (3.52) _{ab}	7.01 (3.79) _{abc}	$F(2, 368) = 0.75, p = .47, \eta_p^2 = .004$

Note. PTSD = Posttraumatic stress disorder. Analyses of covariance control for past-year income, employment, living with partner (yes = 1, no = 0), mean days of face-to-face contact, and past six-month physical intimate partner violence victimization. Means that do not share subscripts differ by $p < .05$.

Table 3. Examination of Racial/Ethnic Differences for the Final Model of Coping Strategies and PTSD Symptom Clusters

	Standardized Regression Weights					z-scores	
	African American	Latina	White	African American vs. Latina	African American vs. White	Latina vs. White	
Social Support Coping → Avoidance Symptoms	-.02	-.11	-.05	-.094	-.036	0.55	
Social Support Coping → Arousal Symptoms	-.09	.18**	.17*	2.82***	2.60***	-.024	
Problem Solving Coping → Arousal Symptoms	.09	-.16*	.002	-2.59***	-1.03	1.53	
Avoidance Coping → Intrusion Symptoms	.35***	.21*	.06	-1.71*	-2.18**	-0.84	
Avoidance Coping → Avoidance Symptoms	.34***	.10	.25**	-2.66***	-0.52	1.67*	
Avoidance Coping → Numbing Symptoms	.41***	.40***	.22*	-.085	-1.28	-0.66	
Avoidance Coping → Arousal Symptoms	.32***	.08	.06	-2.28**	-2.07**	-0.08	

Note. PTSD = Posttraumatic stress disorder. Analyses control for past-year income, employment, living with partner (yes = 1, no = 0), mean days of face-to-face contact, and past six-month physical intimate partner violence victimization.

* $p < .05$.

** $p < .01$.

*** $p < .001$.