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Mental Health Consequences of Intimate Partner Abuse:

A Multidimensional Assessment of Four Different Forms of Abuse

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Abstract

Battered women are exposed to multiple forms of intimate partner abuse. This article explores the independent contributions of physical violence, sexual coercion, psychological abuse, and stalking on symptoms of posttraumatic stress disorder (PTSD) and depression among a sample of 413 severely battered, help-seeking women. The authors test the unique effects of psychological abuse and stalking on mental health outcomes, after controlling for physical violence, injuries, and sexual coercion. Mean scores for the sample fall into the moderate to severe range for PTSD and within the moderate category for depression scores. Hierarchical regressions test the unique effects of stalking and psychological abuse, after controlling for physical violence, injuries, and sexual coercion. Psychological abuse and stalking contribute uniquely to the prediction of PTSD and depression symptoms, even after controlling for the effects of physical violence, injuries, and sexual coercion. Results highlight the importance of examining multiple dimensions of intimate partner abuse.

Keywords

battered women; depression; intimate partner abuse; mental health; post-traumatic stress disorder

The multidimensional nature of intimate partner abuse has been recognized in the National Violence Against Women Survey (NVAWS; Tjaden & Thoennes, 2000) and elsewhere (e.g., Basile, Arias, Desai, & Thompson, 2004; Follingstad, Rutledge, Berg, Hause, & Polek, 1990; Mechanic, Weaver, & Resick, 2000; Smith, Thornton, DeVellis, Earp, & Coker, 2002). In a population-based sample of women in North Carolina, 18.4% reported experiencing at least one form of intimate partner abuse by a current or recent intimate partner (Smith et al., 2002). However, only 1.9% of the sample experienced physical assault in the absence of other forms of partner abuse, and only 1.1% reported sexual assault alone. Given the topographical overlap between multiple dimensions of abuse, recommendations of the National Research Council highlight the importance of studying co-occurring forms of partner abuse (Crowell & Burgess, 1996).

Data from the NVAWS suggest that female-stalking victims (59%) tend to be stalked by current or former intimate partners, rather than by strangers or acquaintances (Tjaden & Thoennes, 1998). Moreover, most women (81%) stalked by a current or former (marital or cohabiting) partner were also physically assaulted by those partners, and many (31%) were sexually assaulted by the same partners who stalked them. In addition, women stalked by former intimate partners were significantly more likely to experience psychological abuse by those partners, compared to women who were not stalked by former partners. These data underscore

the topographical overlap among multiple dimensions of partner abuse. Nonetheless, relatively few studies of battered women include multidimensional assessments of physical assault, sexual coercion, psychological abuse, and stalking (cf. Basile et al., 2004).

Most research addressing the consequences of intimate partner abuse has focused on acts of physical aggression, whereas significantly less attention has been accorded more subtle and difficult-to-measure dimensions of partner violence such as psychological abuse (Arias, 1999). This gap is surprising, given that battered women frequently identify psychological abuse as inflicting greater distress compared to physical acts of violence (Follingstad et al., 1990; Vitanza, Vogel, & Marshall, 1995). To a large extent, the developing research on psychological abuse has grappled more with the complexities of psychometric measurement than with understanding the impact of psychological abuse on mental health outcomes (Maiuro, 2001). Recent research has begun to address the roles of psychological abuse in shaping battered women's strategic, psychological, and symptomatic responses to abuse (e.g., Arias & Pape, 1999; Basile et al., 2004; Dutton, Goodman, & Bennett, 1999; Marshall, 1996, 1999; Mechanic, Weaver, et al., 2000; Mechanic, Uhlmansiek, Weaver, & Resick, 2000; Sackett & Saunders, 1999).

Psychological Abuse

In their study of sheltered battered women, Arias and Pape (1999) found that psychological abuse contributed significant unique variance to battered women's post-traumatic stress disorder (PTSD) symptoms and their reported intentions to terminate relationships with abusive partners, even after controlling for the effects of physical violence. In a sample of court-involved battered women, Dutton et al. (1999) reported that symptomatic responses to abuse, including PTSD and depression, were largely predicted by psychological abuse, rather than by physical violence. In an effort to disentangle the effects of physical from psychological abuse, Sackett and Saunders (1999) compared 30 sheltered battered women with 30 nonsheltered battered women on outcomes assessing depression, self-esteem, and fear. Psychological abuse contributed uniquely to the predictions of all three outcomes, with the most robust effects of psychological abuse identified on outcomes assessing fear and self-esteem. Among female partners of abusive men in treatment, Taft, Murphy, King, Dedeyn, and Musser (2005) found more consistent relationships between psychological abuse and PTSD than between physical violence and PTSD. Prospective analyses assessing various forms of psychological abuse revealed that denigration predicted PTSD strongly and consistently across analyses. In a multivariate analysis of risk markers for injury, Thompson, Saltzman, and Johnson (2001) found that emotional abuse increased the risk of both minor and severe physical injuries. Finally, Marshall's (1999) research on 834 low-income abused women found that psychological abuse added unique variance to the prediction of women's stress, distress, self-esteem, depression, and health quality of life, even after controlling for the effects of physical and sexual aggression.

Sexual Violence

Research on sexual violence in the context of other forms of partner violence has also been scarce (Bennice & Resick, 2003; Bennice, Resick, Mechanic, & Astin, 2003). Studies comparing women who were battered only with women who were battered and sexually assaulted have found more severe physical violence when sexual violence was present (Frieze, 1983), as well as more severe symptomatology (Bennice et al., 2003). However, the role of sexual coercion in predicting unique variance in PTSD symptomatology has been mixed when other dimensions of IPV are included in multivariate analyses (Basile et al., 2004; Bennice et al., 2003).

Stalking

Compared to physical, sexual, and psychological abuse in intimate partnerships, relatively scant attention has been devoted to the role of stalking as a predictor of adverse outcomes among abused women. Evidence suggests that when stalking is present in an abusive relationship, it may be a risk factor for escalated forms of violence, including femicide (McFarlane, Campbell, & Watson, 2002) and for elevated levels of psychological symptomatology and fears of lethal harm (Harris, Valdovinos, Mechanic, Marelich, & Resick, 2004; Mechanic, Weaver, et al., 2000). Clearly, more research addressing the impact of stalking in the context of other concurrent forms of partner abuse is needed.

Mental Health Consequences of Intimate Partner Abuse

PTSD

The mental health consequences of intimate partner abuse have been well documented, with PTSD and depression as the most commonly identified disorders (Campbell, Kub, Belknap, & Templin, 1997; Campbell & Soeken, 1999a, 1999b; Gleason, 1993; Golding, 1999; Sutherland, Bybee, & Sullivan, 1998; Weaver & Clum, 1995). Rates of PTSD among battered women range from 31% to 84%, with a weighted mean prevalence estimate of 64% (Golding, 1999). These rates are considerably higher than PTSD rates found among general community samples of women, which range from 1% to 12%, and also exceed the PTSD rates found among community samples of women with histories of criminal victimization. Using a sub-sample of female participants completing the NVAWS telephone survey, Basile and colleagues (2004) found that physical, psychological, and stalking violence were associated with PTSD symptoms.

Physical injury has been documented following intimate partner violence (IPV) in epidemiological surveys (Stets & Straus, 1990; Weaver, Kilpatrick, Resnick, Best, & Saunders, 1997), outpatient treatment-seeking samples (Cantos, Neidig, & O'Leary, 1994), emergency medical samples (Adlakha & Lobl, 1993), and primary care and/or obstetrical samples (Helton, McFarlane, & Anderson, 1987). In addition to the implications of injury for women's physical health functioning, injury has also been associated with emotional sequelae of trauma, including PTSD and depression (Fauerbach et al., 2000; Kilpatrick et al., 1989). Given these associations, infliction of physical injuries is also measured within the current study.

Depression

The weighted mean prevalence rate of major depression among battered women is estimated to be 48% (Golding, 1999), a rate also considerably higher than those obtained in epidemiological samples of women. Notably, depression among battered women has been found to be chronic, with symptoms continuing to exist over time for some battered women, even in the absence of recent revictimization (Campbell et al., 1997; Campbell & Soeken, 1999b; Campbell, Sullivan, & Davidson, 1995). Clinically significant levels of depression were reported among a sample of battered women (43%) in the community following receipt of extensive services from emergency or transitional living shelters (Ham-Rowbottom, Gordon, Jarvis, & Novaco, 2005). Symptoms persisted even after a considerable length of time had passed following receipt of services (i.e., average of 18 months for the emergency shelter sample and 38 months for the transitional housing sample) and in the absence of repeat violence. Cumulative adversity in the form of exposure to multiple stressors was associated with a downward spiral of depressive symptoms among a sample of help-seeking battered women followed up for 2 years after separation (Anderson, Saunders, Mieko, Bybee, & Sullivan, 2003).

The goal of our study was to assess the unique contributions of physical violence, sexual coercion, psychological abuse, and stalking on symptoms of PTSD and depression among a sample of severely battered, help-seeking women. Using a clinician interview to assess IPV and symptomatology, we conducted a multidimensional assessment of multiple forms of partner abuse, specifically testing the unique effects of the understudied forms of partner abuse—namely, psychological abuse and stalking, after controlling for the expected contributions from physical violence, injuries, and sexual coercion. We predicted that both stalking and psychological abuse would contribute unique variance to the predictions of PTSD and depression after controlling for physical and sexual relationship violence and that the contributions from physical violence would be diminished once psychological abuse and stalking were entered into regression equations first.

Method

Participants

The sample consisted of 413 women drawn from community battered women's programs. Demographic characteristics of the sample are summarized in Table 1. Participants averaged 34.5 years of age ($SD = 8.1$). The majority of participants were African American. The majority of women (70%) had at least one child under the age of 18 residing with them ($SD = 1.5$). Women received an average of 12.4 years of education ($SD = 2.0$), ranging from 4 to 19 years. Despite their relatively high educational attainment, the sample was impoverished in terms of income. Approximately one third of participants reported personal incomes of less than \$5,000 annually. Demographic characteristics of the sample are listed in Table 1.

In terms of participants' relationships with their abusive partners, slightly more than one quarter (28.5%) were married, 11% were involved in dating relationships with their abusers, and 10.4% were separated or divorced from their perpetrators. Another 50.5% reported having had cohabitating relationships with their abusive partners, even though most were not living with their partners at the time of the assessment. Furthermore, 9.7% of the sample resided with their abusive partners, whereas the majority of participants reported living elsewhere. Nearly all participants (97.8%) identified their perpetrators as male. Participants' abusive relationships averaged 6.9 years ($SD = 6.5$ years), ranging from 3 months to 32 years. The duration of abuse spanned nearly 5 years ($M = 4.6$ years, $SD = 5.5$), ranging from 7 days to 32 years. Relationship characteristics of the sample are summarized in Table 1.

Recruitment and Screening Criteria

Participants were recruited from residential and nonresidential community agencies serving battered women. Research staff made presentations to community agency staff during their regular staff meetings. Questions or concerns about the research goals and procedures were clarified at that time. Agency personnel apprised their clients of the research opportunity during the intake process. Agency clients were provided with a postcard briefly describing the study and listing confidential contact information for the study staff. A dedicated telephone line was established for purposes of participant recruitment.

Prospective participants contacted us and were screened for eligibility on the telephone. To recruit a sample of battered women who experienced recent, serial IPV, we used several screening criteria for potential participants: (a) length of relationship, (b) recency of violence, and (c) severity of violence. First, participants were required to have been in an intimate relationship, whether cohabiting or not, for a minimum of 3 months, effectively ruling out dating violence taking place within the context of casual dating relationships. Second, to improve reporting accuracy, we required that the most recent episode of violence occurred within the past 6 months. However, if the most recent episode occurred less than 2 weeks

earlier, participants were scheduled so that there was at least 2 weeks between the most recent episode and the assessment. This designation was made so to reduce potential inflation of scores on symptom measures as a consequence of assault recency. Participants were assessed a minimum of 2 weeks following their last exposure to a violent incident to avoid artificially inflating PTSD scores based on very recent exposure to physical violence. The sample nonetheless was one with chronic exposure to repeat relationship abuse and violence.

Finally, to obtain a sample of women who experienced more than an occasional episode of relationship violence, we required that participants experience at least four incidents of minor violence or two episodes of severe violence (or some combination of four incidents of minor and/or severe violence) within the past year. Minor violence items were as follows: pushed, shoved, or grabbed you; slapped or hit you; threw things at you that could hurt; and twisted your arm or pulled your hair. Severe violence items were as follows: hit or punched you with a fist or with something that could hurt; caused you to have physical injuries; choked you; slammed you against a wall or threw you down stairs; kicked you or beat you up; threatened you with a weapon; used a weapon against you; forced you to have sex when you did not want to; caused you to fear for your life or the lives of your family members.

Participants who were ruled out of the study based on their telephone screening were given support, thanked for their time, and were provided with information about appropriate resources in the community. Sixty-seven women were screened out of the study for the following reasons: Seven women were with their partners for fewer than 3 months, 17 women reported fewer than the required number of episodes of physical violence, 38 women reported abuse that occurred more than 6 months ago (and for some women, the abuse ended many years ago), and 12 women declined to participate after completing the initial telephone screen. Twelve women were terminated from study participation for reasons including apparent psychosis, acute suicidality, drug or alcohol intoxication, or other factors potentially affecting the validity of the results. Another 14 women were dropped from the final data set due to suspected problems with the validity of their self-reported data (e.g., participant completed study measures much too quickly, response bias, or participant denied having experienced partner violence after having positively endorsed partner violence items on the telephone screen).

Participant literacy was assessed by having participants informally demonstrate their understanding of the consent process by having them paraphrase what they read. In the event that a participant had questionable literacy, the questions were read aloud to the participant by a trained female interviewer on the project.

The research was conducted at a university-based trauma center housing a community-based trauma clinic and research facilities. The center was located in an urban setting that was easily accessible by bus and an above-ground rail system that dropped passengers off very close to the setting, thus minimizing travel stress for participants.

Instruments

Psychological Maltreatment of Women Inventory— Abbreviated Version (PMWI; Tolman, 1989, 1999)—The abbreviated 14-item version of the PMWI consists of two factor-derived subscales that measure dominance and isolation and emotional and verbal abuse. Evidence of reliability and validity are presented in Tolman (1999). The scale is a self-report measure, and each item is rated on a 5-point frequency scale, ranging from 1 = *never* to 5 = *very frequently*. Each subscale consists of 7 items. Coefficient alphas were .89 (dominance and isolation) and .91 (emotional and verbal) in the current study.

Revised Conflict Tactics Scale–2 (CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996)—Two subscales of the revised CTS-2 were administered to assess the frequency and severity of physical assault (CTS-PA; 12 items) and injury (CTS-I; 6 items). Ratings are made in terms of frequency (0 = *never*, 1 = *once in past year*, 2 = *twice in past year*, 3 = *3 to 5 times in past year*, 4 = *6 to 10 times in past year*, 5 = *11 to 20 times in past year*, 6 = *more than 20 times in past year*). The authors of the CTS-2 suggest creating a severity index by adding the midpoint for each item and creating a summed score for each subscale. The midpoint equals the rating for ratings of 0, 1, and 2 for items rated with those scores. Scores of 3 are recoded to 4, scores of 4 are recoded to 8, scores of 5 are recoded to 15, and scores of 6 are recoded to 25. Separate subscales assessing minor and severe violence were used. The Minor Violence subscale consisted of the five CTS-2 minor violence items and had a coefficient alpha of .87. The Severe Violence subscale contained the 7 CTS-2 severe violence items supplemented with two additional items assessing repeated and violent shaking and being hit on the head repeatedly. This subscale had a coefficient alpha of .86 in the current sample.

To assess sexual coercion, we used a modification of the CTS-2 items, by using two separate questions to assess (a) the use of threats or force to coerce oral or anal sex and (b) the use of threats or force to coerce vaginal intercourse. CTS-2 scoring was used. The alpha for the two items was .72.

The Stalking Behavior Checklist (SBC; Coleman, 1997)—The SBC is a 25-item inventory assessing a variety of unwanted harassing and pursuit-oriented behaviors. Each item was rated on a 6-point frequency scale, ranging from (0 = *never*, 1 = *once a month or less*, 2 = *2 to 3 times per month*, 3 = *once or twice per week*, 4 = *3 to 6 times per week*, and 5 = *once per day or more*). Participants rated each item for the period of time covering the 6 months preceding study participation. Two subscales, Harassing Behavior and Violent Behavior, comprise the SBC. The SBC was originally factor analyzed (Coleman, 1997) resulting in two subscales, Violent Behavior with 12 items accounting for 34.7% of the variance, and Harassing Behavior with 13 items, accounting for 10.8% of the variance. The Violent Behavior subscale consists of items addressing overt acts of violence (e.g., broke into your home or car, violated a restraining order). The Harassing Behavior subscale consists of items reflecting nonviolent harassment, such as unwanted telephone calls, gifts or visits, and being followed. Only the Harassing Behavior items were included in the present analyses, because the Violent Behavior subscale shared too much overlap with measures of physical violence. Coefficient alpha for the Harassing Behavior subscale was .90 in the current sample.

The Standardized Battering Interview—This interview consists of a variety of structured questions assessing demographic and abusive relationship characteristics. Embedded in this structured interview were questions addressing various aspects of the abusive relationship, including: length of the battering, length of the abusive relationship, date of most recent episode of abuse, and time since leaving the relationship most recently. Participants were also queried about a range of minor and severe injuries. Each injury item is rated on a frequency scale. Six items assess minor injuries: (a) bruises to the head, face, or neck; (b) bruises to the rest of the body; (c) cuts on the head, face, neck; (d) cuts on the rest of the body; (e) burns to head, face, neck; and (f) burns to other parts of the body. These six items had a coefficient alpha of .73. Seven items assessing severe injuries were also included: (a) broken bones in the head, face, neck; (b) broken bones on other parts of the body; (c) dislocated bones on parts of the body other than head, face, neck; (d) loss of consciousness; (e) damaged teeth; (f) ruptured eardrum; and (g) damage to internal organs. Coefficient alpha for this subscale was .69. The low endorsement rate for this group of very severe injuries constrained the alpha level.

The Posttraumatic Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997)—The PDS is a 34-item measure of PTSD symptoms that can be used to compute a

continuous severity score, severity scores for each of the three clusters of symptoms, and for making a formal diagnosis of PTSD. Seventeen items assess symptom frequency, rated for the past month using a 4-point scale (0 = *not at all or only one time*, 1 = *once a week or less or once in a while*, 2 = *2 to 4 times per week or half the time*, 3 = *five or more times a week or almost always*). Coefficient alpha for the 17-point scale was .90 in this sample of battered women. The PDS has been found to possess excellent psychometric properties, including internal consistency, test-retest reliability, and convergent validity with other well-established measures of PTSD. Scores are interpreted according to severity: 10 or less = *mild*, 11 to 20 = *moderate*, 21 to 35 = *moderate to severe*, 36 and more = *severe*.

Beck Depression Inventory–Second Edition (BDI-II; Beck, Steer, & Brown, 1996)—The BDI-II is an updated version of its widely used predecessor, the BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), which measures depressive symptoms. The BDI-II contains 21 items assessing depressive symptoms corresponding to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth edition* (DSM-IV; American Psychiatric Association, 1994) criteria for major depressive disorder. Items are rated on a 4-point severity scale. Coefficient alpha for the scale was .90 in the present sample. Total scores were obtained by summing the items, and scores can be clinically evaluated using the following cut score guidelines: 0 to 13 = *minimal*, 14 to 19 = *mild*, 20 to 28 = *moderate*, 29 to 63 = *severe*.

Procedure

Participants who met study criteria and agreed to participate completed the study in two visits that typically occurred within several days of each other. On the initial day, women completed several symptom-based measures programmed onto a laptop computer to reduce the likelihood that symptom scores would be elevated as a consequence of discussing traumatic material. A trained female research assistant worked closely with the participant to demonstrate the laptop procedure. There were practice questions to ensure that the participant was using the computer correctly. The research assistant remained available for assistance throughout the procedure in case a participant encountered technical difficulties. Data from our own (Griffin, Resick, Waldrop, & Mechanic, 2003) and other studies suggest that participants enjoy the use of computer-administered instruments, often preferring them to traditional paper-and-pencil versions.

Next, master's or doctoral-trained female clinicians with extensive experience dealing with traumatized populations interviewed participants. Interview materials included participant exposure to partner abuse, injuries sustained, responses to abuse, and a number of other constructs not relevant to the current analyses. The second day consisted of additional self-report instruments that were programmed onto a laptop computer. Those measures are not relevant to the present article. Debriefings were conducted with participants following completion of all instruments. Participants were paid for their time.

Results

Symptomatology

In terms of symptom severity, the majority of the sample reported moderate to severe (45%) and severe (31%) PTSD. Mild and moderate symptoms were endorsed by 5.9% and 17.9% of the sample, respectively. Depressive symptoms yielded a similar pattern of results. Moderate and severe symptoms were endorsed by 31.8% and 39.6% of the sample, respectively. In contrast, minimal and mild symptoms were reported by 13.4% and 15.1% of the sample, respectively. These data are found in Table 2. Mental health symptoms falling within the severe range were reported by more than one third of the sample (PTSD, 31%; depression, 39%). Moreover, PTSD and depression were also highly comorbid ($r = .67, p < .001$).

Regression Analyses

First, Pearson correlations between the set of predictors and each outcome variable were computed. These data are presented in Table 3. Each type of violence, psychological abuse, and stalking were significantly though modestly associated with symptoms of PTSD and depression.

To examine the relative contributions of stalking, psychological abuse, and physical violence on mental health outcomes, a set of two hierarchical multiple regression analyses were conducted on each dependent measure (PTSD and depression). In the first regression, physical aggression (CTS-Minor, CTS-Severe) and sexual coercion were entered on the first step, followed by the addition of the two injury variables (minor and severe injury) on the second step. The final step added two psychological abuse variables (emotional and verbal abuse, dominance and isolation) from the PMWI and the measure of stalking (harassing behavior). A second regression was then conducted reversing the order of entry to test for unique variance associated with the addition of each set of variables.

PTSD—Results of the hierarchical regression analysis predicting PTSD scores are presented in Table 4. When entered into the equation on the first step, physical and sexual aggression accounted for 7.5% of the variance in PTSD symptoms. The two injury variables were added next, contributing an additional 4.9% of explained variance in PTSD scores. Psychological abuse and stalking were added last and contributed an additional 8.1% of explained variance to the prediction of PTSD. Reversing the entry order, psychological abuse and stalking were entered first and now accounted for 16.8% of the variance in PTSD. With psychological abuse and stalking controlled, physical and sexual aggression no longer contributed unique variance to the prediction of PTSD. The final addition of the injury added 2.9% to the explained variance. In the full model, significant independent predictors of PTSD were harassing behavior, emotional and verbal abuse, and minor injuries.

Depression—Results of the hierarchical regression analysis predicting PTSD scores are presented in Table 5. When entered into the equation on the first step, physical and sexual aggression accounted for 6.5% of the variance in depressive symptoms. The two measures of injury were added next and contributed an additional 1.6% of explained variance, although this finding did not reach conventional levels of significance. The final addition of psychological abuse and stalking added an additional 5.8% of explained variance in depression. Reversing the entry order, added first, psychological abuse and stalking accounted for 12.2% of the variance in symptoms of depression. With psychological abuse and stalking controlled, physical and sexual aggression no longer contributed unique variance to the prediction of symptoms of depression. The final addition of the injury variables also did not significantly contribute to the prediction of depression once the effects of the psychological and stalking variables were accounted for. In the full model, significant independent predictors of depression were harassing behavior and emotional and verbal abuse.

Discussion

Given the topographical overlap among multiple dimensions of intimate partner abuse, a primary goal of the study was to examine the specific contributions of psychological abuse and stalking to abuse-related symptoms, after controlling for the effects of physical violence, sexual coercion, and injuries. Although research has begun to catalogue the impact of psychological abuse on a range of outcomes, most of these studies have included only a limited range of abuse dimensions (e.g., physical violence and psychological abuse).

Severity of Symptoms

It is not surprising that the women in this sample reported very high rates of PTSD and depression. Mean scores for the sample fell into the moderate to severe range for PTSD and within the moderate category for depression scores. Severe PTSD symptoms were reported by approximately one third of the sample, and 39% of participants had depression scores in the severe range. Moreover, PTSD and depression tended to be highly comorbid, thereby further increasing the likelihood of debilitating outcomes.

The severity of symptoms in this sample was not unexpected, given that inclusion criteria for the study required a minimum of two severe or four minor incidents of violence in the preceding year. Participants reported experiencing partner abuse an average of 4.6 years, and most reported being separated from the abuser at the time of participation. The high rates of severe mental health symptoms reported by our study participants are consistent with other research documenting clinically significant symptoms of PTSD and depression among battered women (Anderson et al., 2003; Golding, 1999; Ham-Rowbottom et al., 2005). Because many battered women are exposed to multiple, frequent, and sometimes unrelenting traumatic events, both during the abusive relationship and after leaving, the impact of exposure is likely to be cumulative (Dougall, Heberman, Delahanty, Inslicht, & Baum, 2000; Follette, Polusny, Bechtle, & Naugle, 1996). By gradually eroding a victim's resources to cope with adversity, exposure to cumulative traumatic events is associated with chronic stress, distress, and impairment (Dougall, et al., 2000; Follette et al., 1996; Nishith, Mechanic, & Resick, 2000).

Recovery from PTSD and depression are also likely to be hampered by chronic encounters with a variety of ecological stressors, including poverty, lack of material and social resources, parenting stress, and other stressors secondary to partner abuse or separation from an abusive relationship (Anderson et al., 2003; Ham-Rowbottom et al., 2005; Sutherland, Bybee, & Sullivan, 2002). Moreover, repeat abuse over time is more likely to occur among battered women with the fewest resources (Bybee & Sullivan, 2002; Goodman, Dutton, Vankos, & Weinfurt, 2005; Sullivan, Basta, & Tan, & Davidson, 1992). Notable are the findings of Goodman et al. (2005) suggesting that social support protected all but the most severely abused women from reabuse. Thus, severely battered women face multiple traumatic stressors in the context of diminished resources. High levels of chronic, clinically significant symptoms are of concern, because they are likely to result in considerable functional impairment, diminished physical health functioning, and reduced quality of life (Ham-Rowbottom et al., 2005; Mechanic, 2004; Sutherland et al., 1998, 2002).

The economic and social costs of IPV are staggering (Centers for Disease Control, 2003). These costs accrue directly from lost wages, loss of earning potential, and indirectly from traumatogenic consequences of partner abuse that impair functioning and reduce quality of life. Although the mechanisms by which partner violence lead to diminished functioning have yet to be definitively established, recent evidence suggests that chronic posttraumatic and depressive symptoms may substantially contribute to the toll battering takes on women's functioning (Mechanic, 2004; Sutherland et al., 1998, 2002). Services for battered women aiming to reduce the severity of postabuse mental health symptomatology might be a useful adjunct to the range of advocacy services, resources, housing, and other forms of tangible assistance frequently provided by battered women's community and shelter-based programs (Allen, Bybee, & Sullivan, 2004). Further research is needed to identify the nature and extent of functional impairment among battered women and the causal pathways through which abuse, ecological stressors, and concomitant symptoms are associated with poor functional outcomes on a variety of dimensions.

Prediction of Mental Health Symptoms

PTSD—As expected, the partner abuse variables contributed significantly to the prediction of PTSD symptoms. All three sets of predictors (physical and/or sexual violence, injuries, psychological abuse and/or stalking) contributed to the prediction of PTSD when the physical violence and injury blocks were entered into the equation before the psychological abuse and stalking variables. Psychological abuse and stalking contributed uniquely to the prediction of PTSD symptoms, even after controlling for the effects of more severe forms of partner abuse. However, once the order of entry was reversed, psychological abuse and stalking entered first and physical injuries entered last contributed to variance in PTSD scores, whereas physical violence and sexual coercion no longer added to the prediction. These results comport with the findings of other researchers who have assessed the unique contribution of psychological abuse apart from physical violence (Arias & Pape, 1999; Dutton et al., 1999). These data also support and extend the findings of Basile and colleagues (2004) by identifying the unique roles of stalking, physical violence, and psychological abuse in predicting traumatic stress symptoms. Our findings, like those of Basile et al., also failed to find a unique contribution of sexual coercion in predicting PTSD. Measurement of sexual coercion with only two items is a likely explanation for the lack of independent contribution of sexual coercion to the prediction of PTSD. Taken together, research conducted on a subsample of a nationally representative sample of women (Basile et al., 2004) and a help-seeking sample of severely and acutely battered women converge in their findings of the significance of nonphysical forms of violence in predicting posttraumatic stress symptomatology.

Harassing behaviors and emotional and verbal abuse both emerged as significant individual predictors in the full model, suggesting their unique contribution to post-traumatic stress symptoms among battered women. The failure of dominance and isolation to reach significance is likely due to conceptual overlap with the stalking and harassing measure (Mechanic, Weaver, et al., 2000). Dominance and isolation significantly predicted PTSD in a study of women seeking marital treatment for partner physical violence (Cascardi, O’Leary, & Schlee, 1999). The unpredictable yet omnipresent threat posed by stalking and harassing behaviors may result in hyper-vigilant behavior and symptoms of hyperarousal as a function of the unpredictable nature of the traumatic stressor. Future studies might examine the relationship between stalking behaviors and each of the three PTSD clusters (intrusion, avoidance, hyperarousal) to understand more about the pathways through which experiences of stalking result in posttraumatic responses among battered women.

Minor but not serious injuries were a significant and unique predictor of PTSD. Injury’s association with PTSD is well documented (e.g., Kilpatrick et al., 1989). Serious injury may not have contributed to the prediction of PTSD due to a relative lack of representation within the sample and reduced power. Although this association has been established, the underlying reasons for the relationship between physical injury and PTSD have not been explored. One possibility is that physical injury covaries with a number of the more severe stressor characteristics, including life threat and use of a gun. Emotional abuse has been found to independently predict both severe and minor physical injuries (Thompson et al., 2001). Therefore, injury, as currently measured, could be serving as a proxy variable for these other assault characteristics. Future research should examine the mechanisms underlying the association between injury and PTSD.

Depression—Consistent with Sackett and Saunders (1999) and Dutton et al. (1999), psychological abuse contributed uniquely to the prediction of depression, after controlling for the effects of physical violence and injuries. Moreover, when the psychological abuse and stalking variables were entered into the equation first, the physical violence variables were no longer significant. Parallel results were reported by Marshall (1999) in an investigation of the

unique roles of physical aggression and overt and subtle psychological abuse on various mental health and relationship appraisal outcomes. With respect to both self-esteem and depression, the impact of physical aggression was muted once the psychological abuse variables were entered into the equation.

Emotional and verbal abuse was a significant individual predictor of depression in the full model. This finding is consistent with reports of battered women describing ridiculing behaviors as particularly pernicious (Follingstad et al., 1990; Sackett & Saunders, 1999). Taunting, degrading behavior may influence depression via its eroding effect on self-esteem and self-worth (Cascardi & O'Leary, 1992; Marshall, 1999). In contrast, the Dominance and Isolation scale did not emerge as an independent predictor in the full model. At a conceptual and statistical level, dominance and isolation behavior and harassing and stalking behavior share a similar underlying control dynamic, and it has been argued that stalking and harassment might even represent an extreme form of dominance (Mechanic, Weaver, et al., 2000). Because the Harassing subscale independently predicted depression in the full model, it is possible that shared variance precluded the independent significance of dominance and isolation. The experience of continued harassment, particularly after having separated from the abusive partner, may contribute to demoralization and hopelessness resulting in depression (Mechanic, Uhlmansiek, et al., 2000). Unfortunately, no prospective studies of battered women's depression have included an assessment of the role of stalking and harassment. However, such research suggests that both severe abuse exposure and high levels of abuse-related stressors were associated with increased depression trajectories over a 2-year period among separated battered women (Anderson et al., 2003). Future prospective studies of battered women's recovery from PTSD and depression might attempt to disentangle the unique effects of continued stalking and harassment on recovery from depression and PTSD.

The findings of this study have implications for both clinical practice and future research. Across both contexts, these results highlight the salience of psychological abuse and stalking in the context of IPV-related PTSD and depression. In the clinical context, it may be particularly important to address the meaning of psychologically abusive experiences that may have reduced a woman's sense of her worth and self-efficacy. Services for partner-abused women and the women themselves often focus on aspects of physical violence, while sometimes focusing less on the pernicious forms of nonphysical abuse. Psychological abuse and stalking and harassment may also contribute indirectly to depression by enhancing exposure to other stressors, which has been found to impede battered women's recovery from depression (Anderson et al., 2003; Sutherland et al., 2002). Thus, clinical implications include attending to the multiple needs of battered women in terms of stress reduction via enhanced access to personal and social resources. Future research would benefit from more detailed analysis of the pathways by which different forms of IPV result in PTSD and depressive symptomatology and from prospective studies assessing changes in the trajectories of symptoms as a function of exposure to various forms of abuse over time.

Limitations of the present research include its cross-sectional design and the use of a help-seeking sample exposed to relatively extensive and severe physical violence. Despite our use of a help-seeking sample, which may not generalize to the broader population of community-dwelling battered women, these women represent those exposed to the most severe forms of violence, often with the fewest material and social resources. Future research should include more heterogeneous samples of battered women, particularly those experiencing stalking and psychological abuse with relatively low levels of physical violence.

This research supports and extends a limited body of extant work highlighting the relatively robust effects of nonphysical forms of IPV on battered women's psychological responses to abuse (Arias & Pape, 1999; Basile et al., 2004; Dutton et al., 1999; Sackett & Saunders,

1999). However, to more fully understand the unique role of psychological abuse, it is necessary to include participants who have experienced psychological abuse in the absence of physical violence, as well as women with less severe exposure to physical violence.

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References

- Adlakha A, Lobl JK. Acute neurologic deficit in a battered woman. *Hospital Practice* 1993;28(2A):95–98. [PubMed: 8432761]
- Allen N, Bybee SH, Sullivan CM. Battered women's multitude of needs: Evidence supporting the need for comprehensive advocacy. *Violence Against Women* 2004;10:1015–1035.
- American Psychiatric Association. *Diagnostic and statistical manual*. 4th ed.. Washington, DC: Author; 1994.
- Anderson DK, Saunders DG, Mieko Y, Bybee DI, Sullivan CM. Long-term trends in depression among women separated from abusive partners. *Violence Against Women* 2003;9:807–838.
- Arias, I. Women's responses to physical and psychological abuse. In: Arriaga, XB.; Oskamp, S., editors. *Violence in intimate relationships*. Thousand Oaks, CA: Sage; 1999. p. 139-161.
- 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]
- Beck, AT.; Steer, RA.; Brown, GK. *Manual for the Beck Depression Inventory–Second edition*. San Antonio, TX: Psychological Corporation; 1996.
- Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Archives of General Psychiatry* 1961;4:561–571. [PubMed: 13688369]
- Bennice JA, Resick PA. Marital rape: History, research, and practice. *Trauma, Violence & Abuse* 2003;4:228–246.
- Bennice JA, Resick PA, Mechanic MB, Astin M. The relative effects of intimate partner physical and sexual violence on posttraumatic stress disorder symptomatology. *Violence and Victims* 2003;18:87–94. [PubMed: 12733621]
- Bybee DI, Sullivan CM. The process through which an advocacy intervention resulted in positive change for battered women over time. *American Journal of Community Psychology* 2002;30:103–132. [PubMed: 11928772]
- Campbell JC, Kub J, Belknap RA, Templin T. Predictors of depression in battered women. *Violence Against Women* 1997;3:271–293.
- Campbell JC, Soeken K. Women's responses to battering: A test of the model. *Research in Nursing and Health* 1999a;22:49–58. [PubMed: 9928963]
- Campbell JC, Soeken KL. Women's responses to battering over time: An analysis of change. *Journal of Interpersonal Violence* 1999b;14:21–40.
- Campbell R, Sullivan CM, Davidson WS. Depression in women who use domestic violence shelters: A longitudinal analysis. *Psychology of Women Quarterly* 1995;19:237–255.
- Cantos AL, Neidig PH, O'Leary KD. Injuries of women and men in a treatment program for domestic violence. *Journal of Family Violence* 1994;9:113–124.
- Cascardi M, O'Leary KD. Depressive symptomatology, self-esteem, and self-blame in battered women. *Journal of Family Violence* 1992;7:249–259.

- Cascardi M, O'Leary KD, Schlee KA. Co-occurrence and correlates of posttraumatic stress disorder and major depression in physically abused women. *Journal of Family Violence* 1999;14:227–249.
- Centers for Disease Control and Prevention. Costs of intimate partner violence against women in the United States. Atlanta, GA: National Center for Injury Control and Prevention; 2003.
- Coleman F. Stalking behavior and the cycle of domestic violence. *Journal of Interpersonal Violence* 1997;12:420–432.
- Crowell, NA.; Burgess, AW. Understanding violence against women. Washington, DC: National Academy Press; 1996.
- Dougall AL, Heberman HB, Delahanty DL, Inslicht SS, Baum A. Similarity of prior trauma exposure as a determinant of chronic stress responding to an airline disaster. *Journal of Consulting and Clinical Psychology* 2000;68:290–295. [PubMed: 10780129]
- Dutton MA, Goodman LA, Bennett L. Court-involved battered women's responses to violence: The role of psychological, physical, and sexual abuse. *Violence and Victims* 1999;14:89–104. [PubMed: 10397628]
- Fauerbach JA, Heinberg LJ, Lawrence JW, Munster AM, Palombo DA, Richter D, et al. Effect of early body image dissatisfaction on subsequent psychological and physical adjustment after disfiguring injury. *Psychosomatic Medicine* 2000;62:576–582. [PubMed: 10949104]
- Foa EB, Cashman L, Jaycox L, Perry K. The validation of a self-report measure of post-traumatic stress disorder: The Posttraumatic Diagnostic Scale. *Psychological Assessment* 1997;9:445–451.
- Follette VM, Polusny MA, Bechtle AE, Naugle AE. Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *Journal of Traumatic Stress* 1996;9:25–35. [PubMed: 8750449]
- Follingstad DR, Rutledge LL, Berg BJ, Hause ES, Polek DS. The role of emotional abuse in physically abusive relationships. *Journal of Family Violence* 1990;5:107–120.
- Frieze IH. Investigating the causes and consequences of marital rape. *Signs* 1983;8:532–553.
- Gleason WJ. Mental disorders in battered women: An empirical study. *Violence and Victims* 1993;8:53–68. [PubMed: 8292565]
- Golding JM. Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence* 1999;14:99–132.
- Goodman L, Dutton MA, Vankos N, Weinfurt K. Women's resources and use of strategies as risk and protective factors for reabuse over time. *Violence Against Women* 2005;11:311–336. [PubMed: 16043552]
- Griffin MG, Resick PA, Waldrop AE, Mechanic MB. Participation in trauma research: Is there evidence of harm? *Journal of Traumatic Stress* 2003;16:221–227. [PubMed: 12816333]
- Ham-Rowbottom KA, Gordon EE, Jarvis KL, Novaco RW. Life constraints and psychological well-being of domestic violence shelter graduates: The "cream of the crop." *Journal of Family Violence* 2005;20:109–121.
- Harris, D.; Valdovinos, M.; Mechanic, MB.; Marelich, WD.; Resick, PA. Mental health effects of stalking among battered women; Poster presented at the annual meeting of the Western Psychological Association; Phoenix, AZ. 2004 Apr.
- Helton AS, McFarlane J, Anderson ET. Battered and pregnant: A prevalence study. *American Journal of Public Health* 1987;77:1337–1339. [PubMed: 3631370]
- Kilpatrick DG, Saunders B, Amick-McMullan A, Best C, Veronen L, Resnick H. Victim and crime factors associated with development of crime-related posttraumatic stress disorder. *Behavior Therapy* 1989;20:199–215.
- Maiuro, RD. Sticks and stones may break my bones, but names will also hurt me: Psychological abuse in domestically violent relationships. In: O'Leary, KD.; Maiuro, RD., editors. *Psychological abuse in violent domestic relations*. New York: Springer; 2001. p. ix-xx.
- Marshall LL. Psychological abuse of women: Six distinct clusters. *Journal of Family Violence* 1996;11:43–55.
- Marshall LL. Effects of men's subtle and overt psychological abuse on low-income women. *Violence and Victims* 1999;14:69–88. [PubMed: 10397627]

- McFarlane J, Campbell JC, Watson K. Intimate partner stalking and femicide: Urgent implications for women's safety. *Behavioral Sciences and the Law* 2002;20:51–68. [PubMed: 12030246]
- Mechanic MB. Beyond PTSD: Mental health consequences of violence against women: A response to Briere and Jordan. *Journal of Interpersonal Violence* 2004;19:1283–1289. [PubMed: 15534331]
- Mechanic MB, Uhlmansiek MH, Weaver TL, Resick PA. The impact of severe stalking experienced by acutely battered women: An examination of violence, psychological symptoms and strategic responding. *Violence and Victims* 2000;15:443–458. [PubMed: 11288940]
- Mechanic MB, Weaver TL, Resick PA. Intimate partner violence and stalking behavior: Exploration of patterns and correlates in a sample of acutely battered women. *Violence and Victims* 2000;15:55–72. [PubMed: 10972514]
- Nishith P, Mechanic MB, Resick PA. Prior interpersonal trauma: The contribution to current PTSD symptoms in female rape victims. *Journal of Abnormal Psychology* 2000;109:20–25. [PubMed: 10740932]
- Sackett LA, Saunders DG. The impact of different forms of psychological abuse on battered women. *Violence and Victims* 1999;14:105–117. [PubMed: 10397629]
- Smith PH, Thornton GE, DeVellis R, Earp J, Coker AL. A population-based study of the prevalence and distinctiveness of battering, physical assault, and sexual assault in intimate relationships. *Violence Against Women* 2002;8:1208–1232.
- Stets, JE.; Straus, MA. Gender differences in reporting marital violence and its medical and psychological consequences. In: Straus, MA.; Gelles, RJ., editors. *Physical violence in American families: Risk factors and adaptation to violence in 8,145 families*. New Brunswick, NJ: Transaction Books; 1990.
- Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues* 1996;17:283–316.
- Sullivan CM, Basta J, Tan C, Davidson WS. After the crisis: A needs assessment of women leaving a domestic violence shelter. *Violence & Victims* 1992;7:267–275. [PubMed: 1294240]
- Sutherland C, Bybee D, Sullivan C. The long-term effects of battering on women's health. *Women's Health: Research on Gender, Behavior, and Policy* 1998;4:41–70.
- Sutherland C, Bybee D, Sullivan C. Beyond bruises and broken bones: The joint effects of stress and injuries on battered women's health. *American Journal of Community Psychology* 2002;30:609–636. [PubMed: 12188053]
- Taft CT, Murphy CM, King LA, Dedejn JM, Musser PH. Posttraumatic stress disorder symptomatology among partners of men in treatment for relationship abuse. *Journal of Abnormal Psychology* 2005;114:259–268. [PubMed: 15869356]
- Thompson MJ, Saltzman LE, Johnson H. Risk factors for physical injury among women assaulted by current or former spouses. *Violence Against Women* 2001;7:886–899.
- Tjaden, P.; Thoennes, N. *Stalking in America: Findings from the National Violence Against Women Survey*. Washington, DC: U.S. Department of Justice; 1998. (NCJ Report No. 169592)
- Tjaden, P.; Thoennes, N. *Extent, nature, and consequences of intimate partner violence: Findings from the National Violence Against Women Survey*. Washington, DC: U.S. Department of Justice; 2000. (NCJ Report No. 118167)
- Tolman R. The development of a measure of psychological maltreatment of women by their male partners. *Violence and Victims* 1989;4:173–189.
- Tolman R. The validation of the Maltreatment of Women Inventory. *Violence and Victims* 1999;14:25–35. [PubMed: 10397624]
- Vitanza S, Vogel LCM, Marshall LL. Distress and symptoms of posttraumatic stress disorder in abused women. *Violence and Victims* 1995;10:23–34. [PubMed: 8555116]
- Weaver TL, Clum GA. Psychological distress associated with interpersonal violence: A meta-analysis. *Clinical Psychology Review* 1995;15:115–140.
- Weaver, TL.; Kilpatrick, DG.; Resnick, HS.; Best, CL.; Saunders, BE. An examination of physical assault and childhood victimization within a national probability sample of women. In: Kaufman-Kantor, G.; Jasinski, J., editors. *Out of the darkness: Contemporary research perspectives on family violence*. Thousand Oaks, CA: Sage; 1997. p. 35–46.

Biographies

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Table 1

Demographic and Relationship Characteristics of Sample ($N = 413$)

	%	<i>M</i>	<i>SD</i>	Min.	Max.
Age		34.5	8.1	18	62
Number of children under 18 years		1.5	1.5	0	8
Education		12.4	2.0	4	19
Personal income					
Less than \$5,000	31.4%				
\$5,000 to \$10,000	28.5%				
\$21,000 to \$30,000	10.6%				
\$31,000 and above	4.6%				
Ethnic background					
African American	66%				
European American	28%				
Latina or Hispanic	1.4%				
Native American	1.4%				
Other	3.0%				
Sex of perpetrator					
Male	98.7%				
Female	1.3%				
Marital status					
Dating	11.0%				
Cohabiting	50.5%				
Married	28.3%				
Separated or divorced	10.4%				
Currently living with perpetrator					
No	90.3%				
Yes	9.7%				
Length of relationship (years)		6.9	6.5	3 months	32 years
Length of abuse (years)		4.6	5.5	7 days	32 years
Length of time since left (months)		3.4	12.5	0 to 14 years	

Table 2

Symptom Severity Scores

Scale	% of Sample Meeting Severity Criterion	M	SD	Min.	Max.
Posttraumatic Diagnostic Scale		28.9	10.9	1	50
Mild	13.4%				
Moderate	15.1%				
Moderate to severe	31.8%				
Severe	39.6%				
Beck Depression Inventory--Second Edition		26.1	11.6	0	56
Minimal	5.9%				
Mild	17.9%				
Moderate	45.0%				
Severe	31.0%				

Table 3

Zero-Order Correlations for Study Variables

Variables	1	2	3	4	5	6	7	8	9	10
1. PTSD total										
		.90 ^a								
2. Depression total	.66*	.90 ^a								
3. CTS minor violence	.24*	.19*	.87 ^a							
4. CTS severe violence	.25*	.17*	.80*	.86 ^a						
5. Minor injuries	.32*	.26*	.59*	.64*	.73 ^a					
6. Severe injuries	.28*	.10*	.38*	.49*	.64*	.69 ^a				
7. CTS sexual coercion	.22*	.17*	.40*	.40*	.29*	.25*	.72 ^a			
8. PMWI dominance and isolation	.34*	.25*	.40*	.37*	.35*	.29*	.33*	.81 ^a		
9. PMWI emotional and verbal	.33*	.27*	.39*	.33*	.031*	.20*	.28*	.67*	.91 ^a	
10. SBC Harassment	.30*	.24*	.37*	.32*	.28*	.25*	.34*	.43*	.31*	.90 ^a

Note: CTS = Conflict Tactics Scale; PMWI = Psychological Maltreatment of Women Inventory; PTSD = Posttraumatic Stress Disorder; SBC = Stalking Behavior Checklist.

^aRepresents coefficient alphas.

* $p < .01$ (two tailed).

Table 4

Hierarchical Multiple Regression Analysis Predicting Posttraumatic Stress Disorder

Predictor	R ² Change	R ²	Change F	P
Step 1: Physical abuse	.075	.075	8.98	<.001
CTS-Minor				
CTS-Severe				
CTS-Sexual coercion				
Step 2: Physical injury	.049	.124	9.2	<.001
Minor injuries ^c				
Severe injuries				
Step 3: Psychological abuse or stalking	.081	.205	11.1	<.001
PMWI-Emotional and verbal ^a				
PMWI-Dominance and isolation				
SBC-Harassing behavior ^b				
Step 1: Psychological abuse or stalking	.168	.168	22.3	<.001
PMWI-Emotional and verbal ^a				
PMWI-Dominance and isolation				
SBC- Harassing behavior ^b				
Step 2: Physical abuse	.008	.008	1.1	<i>ns</i>
CTS-Minor				
CTS-Severe				
CTS-Sexual coercion				
Step 3: Physical injury	.029	.205	5.97	<.05
Minor injuries ^c				
Severe injuries				

Note: CTS = Conflict Tactics Scale; PMWI = Psychological Maltreatment of Women Inventory; SBC = Stalking Behavior Checklist.

^aSignificant independent predictor in full model: $\beta = .172, t = 2.53, p < .05$.

^bSignificant independent predictor in full model: $\beta = .148, t = 2.60, p < .05$.

^cSignificant independent predictor in full model: $\beta = .167, t = 2.20, p < .05$.

Table 5

Hierarchical Multiple Regression Analysis Predicting Depression

Predictor	R ² Change	R ²	Change F	P
Step 1: Physical abuse	.065	.065	7.8	<.001
CTS-Minor				
CTS-Severe				
CTS-Sexual coercion				
Step 2: Physical injury	.016	.081	2.9	.055
Minor injuries				
Severe injuries				
Step 3: Psychological abuse or stalking	.058	.140	7.4	<.001
PMWI-Emotional and verbal ^a				
PMWI-Dominance and isolation				
SBC-Harassing behavior ^b				
Step 1: Psychological abuse or stalking	.122	.122	15.5	<.001
PMWI-Emotional and verbal ^a				
PMWI-Dominance and isolation				
SBC-Harassing behavior ^b				
Step 2: Physical abuse	.009	.131	1.2	<i>ns</i>
CTS-Minor				
CTS-Severe				
CTS-Sexual coercion				
Step 2: Physical injury	.008	.140	1.6	<i>ns</i>
Minor injuries				
Severe injuries				

Note: CTS = Conflict Tactics Scale; PMWI = Psychological Maltreatment of Women Inventory; SBC = Stalking Behavior Checklist.

^aSignificant independent predictor in full model: $\beta = .171, t = 2.42, p < .05$.

^bSignificant independent predictor in full model: $\beta = .142, t = 2.43, p < .05$.