

# Posttraumatic Stress Symptoms Among Men Who Sustain Partner Violence: An International Multisite Study of University Students

Denise A. Hines  
Clark University

Although research consistently shows that men can sustain intimate partner violence (IPV), few studies have investigated the possible consequences of sustaining IPV among men. The current study investigated the association between sustaining IPV and posttraumatic stress (PTS) symptoms among 3461 male university students at 60 sites around the world. Because this was a multisite study, analyses were also conducted to investigate whether the association between sustaining IPV and PTS existed at all sites, and whether certain site-level characteristics influenced the association. Results showed that sustaining IPV was a significant predictor of PTS symptoms at all sites. At the site level, lower levels of violent socialization and higher levels of hostility toward men increased the associations between sustaining IPV and PTS.

*Keywords:* intimate partner violence, posttraumatic stress, male victims, gender hostility, violent socialization

Evidence of men sustaining violence in the context of romantic relationships has existed since the beginning of systematic research in family violence (e.g., Gelles, 1974), but rates vary depending upon the methodology of the study. National surveys, including the National Violence Against Women Survey (NVAWS; Tjaden & Thoennes, 2000), the National Family Violence Surveys (Straus & Gelles, 1990), and the National Comorbidity Survey (Kessler, Molnar, Feurer, & Appelbaum, 2001) estimate that between 39% and 50% of all IPV in a given year is sustained by men, and that rates of IPV against men range from 0.8% of men in the previous year (Tjaden & Thoennes, 2000) to 12% of men in the previous year (Kessler et al., 2001; Straus & Gelles, 1990). The majority of men who sustain IPV are in relationships with women (e.g., Hines, Dunning, & Brown, 2007); however, men sustain violence in gay relationships at rates that are at least comparable to the rates experienced by men in heterosexual relationships (for a review, see Hines & Malley-Morrison, 2005).

Although research has consistently shown that men can sustain IPV, little research has been conducted on the predictors, correlates, and consequences of IPV sustained by men (e.g., Hines & Malley-Morrison, 2001). The purpose of the current study was to examine one of the possible consequences of IPV against men: posttraumatic stress (PTS) symptomatology. This possible consequence was studied among 3461 men at 60 different sites around the world.

## Posttraumatic Stress Symptomatology

Posttraumatic stress disorder (PTSD) is a psychiatric condition that can follow the experience of a traumatic incident, and its symptoms tend to cluster on three dimensions: persistent reexperiencing of the trauma, persistent avoidance of stimuli associated with the trauma, and persistent increased arousal (American Psychiatric Association, 1994). Symptoms include intrusive memories and nightmares of a traumatic incident, numbing of emotions, social withdrawal, hypervigilance, difficulty in concentrating and remembering, insomnia, and avoidance of activities that remind one of the traumatic event. Although severe and persistent symptoms are needed to be diagnosed with PTSD (Wakefield & Spitzer, 2002), many people who experience a traumatic event respond with at least some of the symptoms of PTSD.

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Denise Hines, Department of Psychology, Clark University.  
Correspondence concerning this article should be addressed to Denise Hines, Department of Psychology, Clark University, 950 Main St., Worcester, WI 01610. E-mail: dhines@clarku.edu

The experience of IPV could be one such traumatic event, and PTS symptoms have consistently been evidenced among women who sustain IPV, with about 30% to 60% of battered women displaying such symptoms (Astin, Lawrence, & Foy, 1993; Cascardi, O'Leary, Lawrence, & Schlee, 1995; Gleason, 1993; Saunders, 1994). Moreover, increased symptoms are positively correlated with greater severity of IPV exposure, although even psychological or mild IPV can elicit PTS symptoms (Astin et al., 1993; Houskamp & Foy, 1991; Kemp, Rawlings, & Green, 1991; Woods & Isenberg, 2001). Thus, PTS symptomatology as a possible outcome of IPV among female victims has been extensively studied; however, little work has been conducted on whether men who sustain IPV could have similar reactions. In one of the few studies on this issue, Dansky, Byrne, and Brady (1999) found that among 58 cocaine-dependent men, men who sustained IPV were more likely to report PTSD than men who were assaulted by a nonintimate. In an analysis of the NVAWS, Coker and her colleagues (2005) showed that 20% of the 185 men who reported sustaining IPV had moderate-to-severe PTS symptoms.

This research, however, is limited in a number of ways. The study on cocaine-dependent men is a very select sample with limited generalizability. Although more generalizable because it is a population-based survey, the NVAWS analyses did not assess the contribution of severity of the IPV sustained to PTS symptoms. Because research shows that it is not just the exposure to trauma that elicits such symptoms, but rather the severity level of the trauma (e.g., Marsella, Friedman, & Spain, 1996), it is possible that men who report a greater severity of sustained IPV will report more symptoms of PTS. Furthermore, neither of these studies investigated whether the association between sustaining IPV and PTS symptoms would generalize across different cultures.

### An International Perspective

The International Dating Violence Study (IDVS), the study from which data for the current article is analyzed, is an international study that assessed dating violence and its correlates among university students at 60 sites around the world. Thus, it offers the opportunity to not only investigate an association between sustaining IPV

and PTS symptoms among male students, but also whether this association is consistent across sites and what may account for differences in this association. Previous analyses of this dataset have shown that rates of men sustaining IPV range from 15.8% to 71.4%, depending upon the nation assessed (Straus, 2006).

In other cross-cultural studies, traumatic stress reactions that are conceptually (if not actually) related to PTSD have been found in every culture in which investigators have studied such reactions. These studies include both Western and non-Western nations, and industrialized and third-world countries (for comprehensive reviews, see De Girolamo & McFarlane, 1996; de Silva, 1999). There is also evidence of a dose-response relationship to traumatic event exposure and PTS symptoms in all cultures studied, such that increased severity of the exposure leads to increased symptoms of PTSD (Marsella et al., 1996). Thus, PTSD seems to be a universal concept; however, different cultures may evidence different rates of PTSD in response to similar traumatic events, such as sustaining IPV. Although some studies show similar associations between the development of PTS symptomatology and traumatic exposure across nations or members of different cultural/ethnic groups (e.g., Norris, 1992; Sebre et al., 2004), most do not: Racial/ethnic differences in rates of PTSD have been found among survivors of various types of traumatic events (Bolin & Klenow, 1988; Durkin, 1993; Green, 1996; Kulka et al., 1991; Palinkas, Downs, Patterson, & Russell, 1993). Therefore, there may be characteristics of a culture, society, or ethnic group that may influence the development of PTS symptoms.

Currently, there is little research on the impact of cultural or community factors in the development of different responses to a particular traumatic event (Green, 1996), although some argue that cultural differences in rates of PTS symptomatology may be due to cultural differences in both periexposure and postexposure environments (Schlenger & Fairbank, 1996). Two such environments that have received empirical support on an individual-level are exposure to violence during childhood (e.g., Brewin, Andrews, & Valentine, 2000), and the extent of hostility from a society toward someone who was exposed to a traumatic event (Johnson et al., 1997).

### *Level of Violence Exposure During Childhood*

Several studies (e.g., Andrews, Brewin, Rose, & Kirk, 2000; Bremner, Southwick, Johnson, Yehuda, & Charney, 1993; Donovan, Padlin-Rivera, Dowd, & Blake, 1996) and a recent meta-analysis (Brewin et al., 2000) have shown that a history of childhood physical abuse is a significant risk factor for the development of PTSD after a subsequent exposure to a trauma. However, little research has documented whether the level of violence in a society and in its child rearing practices has any societal-level influence on rates of PTS symptoms in victims of a given traumatic event, such as sustaining IPV.

Some researchers have argued that the prominence of violence in a culture could influence the reactions of individuals in that culture to a traumatic event, in that the more violent the culture, the more likely it is that people within that culture will develop PTSD in reaction to a traumatic event, such as an earthquake (Marsella & Christopher, 2004). On the other hand, higher levels of violence in a society could lead the individual members to develop coping mechanisms to violent events, and therefore, violent victimization would not be considered as traumatic an event as in societies in which violence is not as normative. This line of reasoning is congruent with recent findings by Lansford et al. (2005) in a study of childhood physical discipline. They found that although physical discipline was associated with adverse outcomes across the six nations in their study, the association was weaker in nations in which physical discipline was considered more normative.

### *Levels of Hostility*

Acceptance and validation of one's experiences by society as a whole is crucial to the psychological health of a society and its members (Johnson et al., 1997). However, sometimes, victims of trauma do not experience acceptance and validation from society; rather, they are confronted with hostility and attributions of blame, as is evidenced by research on rape victims and Vietnam veterans. For example, according to clinical accounts, rape victims tend to report that societal attitudes, such as

attributions of blame, are significant factors in the development of their traumatic reactions to the victimization (Herman, 1992). In addition, researchers have surmised that a powerful predictor of the poor psychological adjustment of Vietnam veterans was the hostile attitude they received from society after their return to the United States from combat (De Fazio, 1975; de Silva, 1999). These hostile attitudes have repeatedly been shown to be very influential in the development and maintenance of PTSD in Vietnam veterans (Fontana & Rosenheck, 1994; Johnson et al., 1997; Schnurr, Lunney, & Sengupta, 2004; Tarrier, Sommerfield, & Pilgram, 1999; Wilson & Krauss, 1985), possibly because the hostility had the effect of isolating the veteran, preventing him from talking about his experiences and emotions, and increasing the self-blame that he felt, which then led to the development and maintenance of PTSD (Fontana & Rosenheck, 1994; Johnson et al., 1997).

A similar process could occur with men who sustain IPV. Previous studies have shown that within the United States, many men who sustain IPV feel isolated because their stories of victimization are not believed, and they are rejected or ridiculed by service and legal organizations when they seek help for sustaining IPV, or even blamed for their partner's violence (Cook, 1997; Hines et al., 2007). These hostile attitudes from society could increase these men's feelings of isolation and self-blame, which, in turn, could lead to increased levels of PTS symptoms. Thus, the level of hostility toward men in a society could increase the association between sustaining IPV and PTS symptoms.

These issues were investigated among a sample of 3461 men from 60 sites around the world who participated in the IDVS. First, the association between PTS symptoms and sustaining IPV was examined, and it was hypothesized that increased severity of sustaining IPV would be associated with increased levels of PTS symptoms among men. Second, two site-level variables, gender hostility and violence socialization, were investigated as possible community context predictors of the association between sustaining IPV and PTS symptoms. It was hypothesized that the association between sustaining IPV and PTS symptoms would be stronger in sites with greater levels of hostility toward

men. The influence of violent socialization on the association between sustaining IPV and PTS symptoms was investigated as a research question because of previous contradictory findings with regard to the mediating influence of violence socialization on the development of PTS symptoms in people exposed to trauma.

## Method

### *Participants*

The data for this article were from the IDVS, which was conducted by members of a consortium of researchers at universities in various regions of the world. The questionnaires were usually administered in classes taught by members of the consortium and in other classes for which they could make arrangements. Almost all of the classes were introductory level psychology, sociology, and criminal justice studies courses.

The percentage of students who chose to participate ranged from 42% to 100%, with most participation rates ranging from 85% to 95%. A detailed description of the study, including the questionnaires and all other key documents, is available on the study website <http://pubpages.unh.edu/~mas2>, and a report on some of the preliminary results is available (Straus & Members of the International Dating Violence Research Consortium, 2004).

The completed questionnaires ( $n = 14125$ ) were examined for questionable response patterns, such as reporting an injury from dating violence but not reporting an assault as having occurred; and statistical outliers, such as attacking a partner with a knife or gun 10 or more times in the past year. About 7.5% of the cases ( $n = 1059$ ) were identified as such and were removed from the sample. Female students ( $n = 7367$ ) were then eliminated from the dataset. In addition, male students who did not complete the measure of dating aggression or who reported that they were not currently or recently (i.e., in the past year) involved in a romantic relationship were eliminated from the analyses ( $n = 2238$ ). This process of elimination resulted in a sample of 3461 male students involved in romantic relationships within the previous year.

Demographic characteristics of the sample are shown in Table 1. These characteristics are presented for the sample overall and for each

site. As shown, sample sizes ranged from five men at the Calcutta, India, site to 160 men at the Swedish site. The average age of the sample was 22.88 years. The mean length of relationship for the sample overall was 12.87 months; over 67% of the relationships were sexual, and 96.1% of the men were involved in heterosexual relationships.

### *Measures*

There was a core questionnaire that each member of the IDVS Research Consortium translated. All consortium members agreed to back-translate to maintain conceptual equivalence (Straus, 1969) across the sites. This core questionnaire consisted of demographic items (e.g., gender, gender of partner, whether sex was part of the relationship, age of participant, parents' education and income, length of relationship), the Revised Conflict Tactics Scales (CTS2, Straus, Hamby, Boney-McCoy, & Sugarman, 1996), and the Personal and Relationships Profile (PRP; Straus, Hamby, Boney-McCoy, & Sugarman, 1999). For the current study, only the demographic information and questions pertaining to sustaining IPV, PTS symptoms, gender hostility, violent socialization, and social desirability were used. In this description of the measures, first individual-level variables will be discussed and then site-level variables.

### *Individual-Level Measures*

*IPV Sustained.* Physical assaults sustained from intimate partners were measured by the Physical Assault scale of the CTS2. For each participant, the number of physically assaultive acts sustained from his romantic partner in the previous year was computed. Participants indicated on a scale from 0 to 6 how many times in the previous year they sustained the acts listed, 0 (0 times), 1 (1 time), 2 (2 times), 3 (3–5 times), 4 (6–10 times), 5 (11–20 times), 6 (more than 20 times). The acts listed contained both minor (e.g., being slapped, grabbed, pushed, or shoved) and severe (e.g., being punched, kicked, burned, or beat up) physical assaults. Participants were then coded according to whether they reported no (= 0) physical assaults, only minor physical assault(s) (= 1), or serious physical assault(s) (= 2) in the previous year. The Physical Assault scale of the CTS2

Table 1  
Descriptive Statistics

Site	<i>N</i>	Age in years <i>M, SD</i>	Length of relationship in months <i>M, SD</i>	% sex part of the relationship	% in heterosexual relationships	% minor violence only	% severe violence	PTSD score <i>M, SD</i>
Overall	3,461	22.88, 5.56	12.87, 8.90	67.3	96.1	16.6	9.3	2.17, 0.48
<i>Asia</i>								
China, Beijing	143	22.87, 4.15	11.17, 8.32	33.3	95.8	14.7	16.1	2.50, 0.37
China, Shanghai	150	21.29, 2.09	9.68, 8.25	23.3	98.0	11.3	7.3	2.17, 0.46
Hong Kong 1	65	24.51, 4.22	12.44, 7.89	13.8	93.8	16.9	7.7	2.41, 0.51
Hong Kong 2	81	25.66, 7.25	15.37, 9.10	49.4	95.1	9.9	11.1	2.35, 0.40
Hong Kong 3	16	28.13, 4.32	13.97, 8.43	33.3	87.5	18.8	18.8	2.47, 0.46
India, Calcutta	5	20.40, 2.41	11.90, 11.41	25.0	80.0	60.0	0.0	2.25, 0.75
India, Pune	21	23.60, 3.56	13.83, 8.22	14.3	90.5	23.8	9.5	2.42, 0.46
Singapore	60	26.97, 3.51	15.67, 8.48	39.0	95.0	10.0	3.3	2.27, 0.45
South Korea, Pusan	73	26.68, 4.16	11.59, 8.39	66.7	98.6	11.0	9.6	2.22, 0.35
Taiwan	38	21.76, 2.22	12.64, 8.38	45.9	94.6	0.0	15.8	2.46, 0.36
<i>Australia/New Zealand</i>								
Australia, Adelaide	38	24.24, 7.03	15.21, 9.51	76.3	84.2	18.4	10.5	2.12, 0.45
New Zealand	27	23.11, 5.98	10.61, 8.01	85.2	96.3	25.9	7.4	2.08, 0.49
<i>Canada</i>								
Hamilton	32	20.58, 3.55	12.33, 7.64	65.6	96.8	6.3	6.3	2.14, 0.49
London	47	19.43, 0.89	10.77, 8.16	61.7	100.0	14.9	8.5	2.22, 0.49
Quebec 1	58	23.68, 4.35	16.67, 8.38	96.6	87.7	13.8	8.6	2.02, 0.55
Quebec 2	88	22.69, 2.90	14.08, 9.13	87.5	97.7	11.4	5.7	1.97, 0.58
Toronto	63	19.76, 1.35	12.74, 8.79	71.4	96.8	20.6	9.5	2.18, 0.44
Winnipeg	16	22.67, 3.04	13.28, 9.35	75.0	100.0	18.8	18.8	2.06, 0.41
<i>Europe</i>								
Belgium	56	36.18, 10.86	13.46, 8.92	75.0	96.4	25.0	7.1	2.06, 0.50
Belgium, Flemish-speaking	96	20.66, 1.91	13.38, 9.07	87.4	96.9	16.7	4.2	1.84, 0.44
England, Leicester	26	19.65, 1.02	12.87, 8.82	84.0	100.0	26.9	11.5	2.18, 0.50
Germany, Freiburg	74	23.91, 2.70	13.03, 8.81	95.9	95.9	21.6	10.8	2.05, 0.45
Greece, Crete	20	21.40, 3.75	8.53, 7.45	80.0	95.0	15.0	20.0	2.14, 0.45
Greece 2	31	22.27, 2.23	14.03, 9.21	96.8	100.0	16.1	12.9	2.22, 0.49
Hungary	49	22.96, 2.94	11.03, 8.49	6.1	95.9	16.3	10.2	1.94, 0.47
Lithuania, Vilnius	112	20.12, 1.32	12.15, 8.99	78.6	98.2	17.0	2.7	2.24, 0.34
Netherlands, Amsterdam	33	21.82, 6.71	14.77, 7.94	75.0	97.0	21.2	12.1	1.81, 0.43
Netherlands, Leiden	15	29.67, 9.12	19.13, 8.01	86.7	78.6	13.3	13.3	1.63, 0.53
Portugal, Braga	113	22.60, 4.01	14.97, 8.72	68.8	98.2	7.1	5.3	2.01, 0.39
Romania	24	21.29, 1.92	11.67, 10.09	78.3	100.0	29.2	16.7	2.07, 0.50
Scotland, Glasgow	31	20.26, 2.76	13.18, 9.03	80.6	96.8	12.9	16.1	2.15, 0.45
Switzerland, French-speaking	45	28.62, 7.96	15.73, 9.25	91.1	91.1	17.8	6.7	2.00, 0.55
Switzerland, German-speaking	27	38.09, 10.04	11.11, 9.11	55.6	96.3	11.1	11.1	1.94, 0.47
Sweden, Gavle	160	28.11, 6.95	18.24, 7.74	98.1	98.8	19.4	3.1	2.01, 0.59
<i>Latin America</i>								
Brazil, Sao Paulo	78	22.51, 4.01	12.97, 9.16	71.8	96.2	9.0	9.0	2.12, 0.48
Guatemala	87	19.60, 2.68	11.06, 8.38	42.5	98.9	11.5	9.2	2.29, 0.53
Mexico, Northern	29	22.66, 4.79	14.41, 9.33	51.7	82.1	10.3	10.3	2.19, 0.46
<i>Middle East</i>								
Iran	22	22.39, 0.00	22.73, 16.39	18.2	95.5	77.3	18.2	2.09, 0.63
Israel, Emek Yezreel	56	30.25, 9.05	10.32, 8.37	91.1	96.4	10.7	7.1	2.11, 0.53
<i>Russia</i>								
Barnaul	58	20.34, 1.05	10.16, 9.25	86.2	100.0	20.7	5.2	2.12, 0.29
St. Petersburg 1	25	21.48, 3.34	12.00, 7.94	90.5	96.0	4.0	12.0	2.15, 0.42

(Continued)

Table 1  
(Continued)

Site	N	Age in years M, SD	Length of relationship in months M, SD	% sex part of the relationship	% in heterosexual relationships	% minor violence only	% severe violence	PTSD score M, SD
St. Petersburg 2	56	18.93, 1.66	6.16, 5.60	70.9	100.0	21.4	10.7	2.33, 0.50
Vladivostok	24	20.67, 1.71	8.35, 8.48	91.7	95.8	29.2	4.2	2.11, 0.45
<i>United States</i>								
Indiana, Terre Haute	51	20.36, 1.45	10.94, 8.25	80.0	95.9	15.7	13.7	2.16, 0.42
Louisiana	24	21.43, 2.79	13.04, 7.78	87.5	91.7	16.7	16.7	2.44, 0.49
Mississippi, Jackson	21	28.71, 8.71	15.17, 8.66	80.0	70.0	14.3	14.3	2.28, 0.45
New Hampshire, Durham 1	120	19.38, 1.61	11.00, 8.31	69.2	97.5	15.8	8.3	2.16, 0.42
New Hampshire, Durham 2	61	22.08, 2.79	13.81, 8.15	83.6	98.3	21.3	6.6	2.09, 0.45
New York, New York	49	19.49, 2.32	11.88, 8.05	79.6	93.9	26.5	28.6	2.26, 0.39
Ohio, Cincinnati	128	20.69, 2.61	13.54, 8.78	70.9	97.7	12.5	7.0	2.25, 0.44
Pennsylvania	48	19.83, 1.17	10.25, 8.25	89.6	87.5	14.6	6.3	2.18, 0.48
Tennessee, Knoxville	25	28.04, 8.35	17.98, 8.48	88.0	80.0	32.0	16.0	2.27, 0.50
Texas, El Paso	112	20.88, 4.32	11.32, 8.78	75.0	96.4	23.2	12.5	2.24, 0.51
Texas, Houston	34	19.85, 1.35	14.04, 8.27	70.6	100.0	20.6	8.8	2.13, 0.54
Texas, Lubbock	155	20.80, 3.23	12.02, 8.40	67.1	97.4	16.8	9.0	2.18, 0.46
Texas, Mexican- American	78	23.69, 5.16	14.03, 9.28	75.0	96.2	24.4	9.0	2.27, 0.45
Texas, Non- Mexican- American	90	23.72, 5.37	13.76, 8.71	77.3	96.7	21.1	8.9	2.28, 0.52
Texas, Nacogdoches	28	21.52, 5.47	12.36, 8.73	71.4	96.4	17.9	25.0	2.41, 0.35
Utah, Logan	57	23.13, 3.28	12.82, 9.18	35.1	96.5	12.3	5.3	2.16, 0.38
Washington, DC	12	21.67, 3.96	14.17, 9.23	100.0	100.0	33.3	16.7	2.34, 0.46

has demonstrated good cross-cultural construct validity and reliability, with an alpha of .88 (Straus, 2004). In the current study, the overall alpha for sustaining physical assault was .76, and it ranged from a low of .53 in Calcutta, India, to a high of .85 in the first Hong Kong site.

*Posttraumatic stress symptoms.* The level of PTS symptoms for each individual was measured with the PTS Symptoms scale of the PRP. The PTS scale contains eight items that are related to the American Psychiatric Association's (1994) diagnostic criteria for PTSD. These items include those that pertain to avoidance of a traumatic memory (e.g., I avoid doing anything that reminds me of terrible things that happened to me), emotional arousal caused by a traumatic event (e.g., I am constantly looking for signs of danger), and re-experiencing of a traumatic event (e.g., Terrible things have happened to me that I remember over and over). It is important to note that the traumatic event is

not necessarily a physical assault that the participant sustained from his romantic partner.

Participants indicated on a 4-point scale, 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), 4 (*strongly agree*), the extent to which they agreed with each item. The items were then summed and divided by the number of items in the scale to obtain an average PTS symptoms score. Reports of preliminary psychometric properties of this scale indicate that it has good validity and internal consistency reliability (Straus & Mouradian, 1999). For the current study, the overall alpha coefficient was .73, and it ranged from a low of .50 in South Korea to a high of .81 in Sweden.

*Social desirability.* Participants' tendency to minimize socially undesirable behavior was controlled with the social desirability scale of the PRP. This 13-item scale includes behaviors and emotions that are slightly undesirable but true of most people, such as, "I sometimes try to get even rather than forgive and forget." Partic-

ipants indicated on a 4-point scale, 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), 4 (*strongly agree*), the extent to which they agreed with each item. The items were then summed and divided by the number of items in the scale to obtain an average social desirability score. The overall reliability of this scale was .69, and it ranged from a low of .59 in Pune, India, to a high of .77 in Pennsylvania.

*Socioeconomic status (SES).* An SES variable was created for each site using three variables: father's education, mother's education, and family income. To create a variable that measured the SES of each student that was relevant to the SES of others at the student's university, the SES variables at each site were transformed into z-scores. The scale thus measures SES as the number of standard deviations each student was above or below the mean at their site.

*Sexual orientation.* "Sexual orientation" was included as a control variable in all analyses. A participant was considered to be involved in a heterosexual romantic relationship if he reported that his current or most recent romantic partner was female, and he was considered to be involved in a homosexual relationship if he reported that his current or most recent romantic partner was male.

### Site-Level Measures

*Hostility toward men.* The mean level of hostility toward men for each site was computed using the site level means for the Gender Hostility to Men scale of the PRP. The site-level means were calculated prior to eliminating the female participants and the participants who were not involved in intimate relationships within the time frame specified by the study to increase the reliability of these variables and to get a better estimate of the level of hostility experienced by men at that site. This scale contains five items pertaining to hostile thoughts or beliefs one may have of men (e.g., Men treat women badly; I often feel resentful of men). Participants indicated on a 4-point scale, 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), 4 (*strongly agree*), the extent to which they agreed with each item, and the items were then averaged. The Gender Hostility to Men scale has shown excellent reliability and validity (Straus & Mouradian, 1999). For the current

study, the mean Gender Hostility to Men scores for each site were used as site-level predictors for any site differences in the IPV sustained-PTS Symptoms slopes. Site scores are presented in Table 2, and higher scores indicate greater gender hostility.

*Childhood violent socialization.* The mean level of childhood violent socialization for each site was measured using the Violent Socialization scale of the PRP. The mean score for the participants at each site was calculated prior to eliminating the female participants and the participants who were not involved in a romantic relationship within the previous year. The Violent Socialization scale consists of 8 items that measure the extent to which the participant experienced and witnessed violence growing up (e.g., When I was a kid, people (adults or kids) who were not part of my family pushed, shoved or slapped me, or threw things at me), and the extent to which the participant received proviolence advice during childhood (e.g., My mother or father told me to hit back if someone hit me or insulted me). Participants indicated on a 4-point scale, 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), 4 (*strongly agree*), the extent to which they agreed with each item. The items were then added together and divided by the number of scores in the scale to compute a mean violent socialization score for each individual. The Violent Socialization scale has demonstrated good internal consistency reliability (Straus & Mouradian, 1999). The site-level means were used as a predictor for any site differences in the IPV Sustained – PTS Symptoms slopes. Table 2 displays the mean Violent Socialization scores for each site in the study.

### Procedure

Questionnaires were distributed at the beginning of the class period. The purpose of the study, and the fact that participation was entirely voluntary was explained and was also on the cover page of the questionnaire. The students were told that the questionnaire was about dating relationships and that it would include sensitive questions concerning attitudes, beliefs, and experiences in a relationship, including questions on sexual behavior. They were guaranteed anonymity and confidentiality of their responses, and they were told that the session would take about an hour (the actual time to finish ranged from 30 minutes to 1 hour). Stu-

Table 2  
Site Level Scores for Hostility to Men and Violent Socialization

Site	Hostility to men	Violent socialization
Overall	2.06	1.83
Asia		
China, Beijing	2.21	2.07
China, Shanghai	2.22	1.99
Hong Kong 1	2.10	1.94
Hong Kong 2	2.20	1.81
Hong Kong 3	2.18	1.96
India, Calcutta	2.38	1.92
India, Pune	2.38	1.93
Singapore	2.06	1.71
South Korea, Pusan	2.37	2.02
Taiwan	2.33	2.14
Australia/New Zealand		
Australia, Adelaide	1.99	1.77
New Zealand	1.95	1.72
Canada		
Hamilton	2.02	1.78
London	2.04	1.85
Quebec 1	1.73	1.56
Quebec 2	1.75	1.64
Toronto	2.08	1.90
Winnipeg	1.98	1.81
Europe		
Belgium	1.92	1.56
Belgium, Flemish-speaking	1.67	1.49
England, Leicester	2.14	1.81
Germany, Freiburg	2.05	1.81
Greece, Crete	2.07	1.83
Greece 2	2.11	1.84
Hungary	1.89	1.68
Lithuania, Vilnius	2.18	1.78
Netherlands, Amsterdam	1.62	1.67
Netherlands, Leiden	1.57	1.52
Portugal, Braga	2.07	1.76
Romania	2.09	1.77
Scotland, Glasgow	2.10	1.99
Sweden, Gavle	1.71	1.52
Switzerland, French-speaking	1.89	1.72
Switzerland, German-speaking	2.03	1.59
Latin America		
Brazil, Sao Paulo	2.12	1.76
Guatemala	2.13	1.87
Mexico, Northern	2.25	2.06
Middle East		
Iran	2.09	1.74
Israel, Emek Yezreel	1.99	1.67
Russia		
Russia, Barnaul	2.18	1.89
Russia, St. Petersburg 1	2.08	1.87
Russia, St. Petersburg 2	2.14	2.01
Russia, Vladivostok	2.05	1.99
United States		
Indiana, Terre Haute	2.09	1.85
Louisiana	2.30	2.25

(Continued)

Table 2  
(Continued)

Site	Hostility to men	Violent socialization
Mississippi, Jackson	2.21	2.08
NH, Durham 1	2.02	1.68
NH, Durham 2	1.98	1.65
NY, New York	2.25	2.22
Ohio, Cincinnati	2.10	1.90
Pennsylvania	2.02	1.64
Tennessee, Knoxville	2.15	2.05
Texas, El Paso	2.19	2.03
Texas, Houston	2.02	1.70
Texas, Lubbock	2.09	1.91
Texas, Mexican-American	2.12	1.93
Texas, Non-Mex.-American	2.12	1.86
Texas, Nacogdoches	2.23	1.90
Utah, Logan	2.05	1.77
Washington, DC	2.23	2.19

Note. Site-level scores for the Hostility to Men scale were determined by taking the mean scores for the female participants at each site. The site-level scores for the Violent Socialization scale were determined by taking the mean scores for all participants at each site.

dents filled out the questionnaire at their own pace and deposited the completed (or if they chose, blank) questionnaire in a box and left the room when they finished. A debriefing form was provided as they turned in their questionnaire. It explained the study in more detail and provided names and telephone numbers of local mental health services and community resources, such as services for battered women.

### Results

Table 1 presents descriptive information concerning the percentage of men who sustained “minor violence only” and “severe violence” in their romantic relationships in the past year. As shown, 16.6% of men reported that they sustained only minor violence in their relationships, whereas 9.3% reported that they sustained severe violence. Thus, overall, 25.9% of men sustained some violence from their romantic partners in the previous year. Rates of “minor violence only” ranged from 0% in Taiwan to 77.3% in Iran. Severe violence rates ranged from 0% in Calcutta, India, to 28.6% in New York. The mean PTS symptoms scores are also displayed in Table 1. For the sample overall, the mean score was 2.17. The lowest mean score was in Leiden, Netherlands ( $M = 1.63$ ),

whereas the highest was in Beijing, China ( $M = 2.50$ ).

To test the research question and hypotheses, a series of hierarchical linear models (i.e., multilevel models) were estimated. Hierarchical linear modeling (HLM) is a technique that allows one to simultaneously consider both individual-level and group-level influences on a variable of interest without violating assumptions of independence (as would occur in the individual-level analysis using site as an independent variable) or losing valuable variability (as would occur in analyses aggregating scores by sites). HLM allows one to examine how group influences interact with individual characteristics by performing a series of nested linear models that take into account hierarchical structure (Raudenbush & Bryk, 2002).

The outcome variable in all of the models was the continuous measure of PTS symptoms. Control variables used in the analyses included: age, length of relationship, whether sex was part of the relationship, sexual orientation, SES, and social desirability response bias of the participant. If a control variable did not significantly predict the outcome variable, it was subsequently dropped from the model. The first model (the null model) contained only the control variables that significantly predicted PTS symptoms. In the next model, the individual-level predictor, level of IPV sustained, was added, and changes in variance were calculated to determine the amount of within- and between-site variance in PTS symptoms explained by the level of IPV sustained. In the final model, the site-level predictors for differences among sites in the association between IPV and PTS (i.e., the IPV-PTS slope) were added. These included the mean Gender Hostility to Men and Violent Socialization scores.

Possible covariates for the HLM analyses are presented in Table 3, and the intercorrelations among these covariates are presented in Table 4. As shown, all of the possible covariates were significantly associated with PTS symptoms. Specifically, participants who were younger, in shorter relationships, with a lower SES, and with a lower social desirability response bias reported more PTS symptoms. In addition, participants in gay relationships and those who reported that they were not having sexual intercourse in their relationships reported more PTS symptoms. For the HLM analyses,

Table 3  
*Pearson Correlations Between Post Traumatic Stress Symptoms and Demographics and Level of Violence*

Variables	PTS symptoms
Age	-.07***
Relationship length	-.11***
Sex part of the relationship <sup>a</sup>	-.09***
Sexual orientation <sup>b</sup>	.06***
Socioeconomic status	-.07***
Social desirability	-.35***
Level of violence <sup>c</sup>	.15***

<sup>a</sup> 1 = Yes, 0 = No; <sup>b</sup> 1 = Heterosexual, 2 = Homosexual;

<sup>c</sup> 0 = None, 1 = Minor only, 2 = Severe.

\*\*\*  $p < .001$ .

these covariates were entered into the initial (null) model, but covariates that were no longer significant after controlling for the other covariates were eliminated in subsequent models. The within sites variance for the null model ( $\sigma^2$ ) equaled .19, and the between sites variance ( $\tau$ ) equaled .02.

Table 3 also shows that the level of violence sustained in the relationship was significantly positively correlated with PTS symptoms. In the second HLM model, the level of violence was added as an individual-level predictor. The level of violence sustained significantly predicted PTS symptoms,  $t = 3.864$ ,  $p < .001$ , and it explained an additional 5.3% of the within-site variance and 5.6% of the between-site variance. In addition, the significant chi square for the IPV sustained – PTS symptoms slope ( $\chi^2 = 102.78$ ,  $p < .001$ ) indicated that the association differed among the sites.

The final HLM model containing site-level predictors for the IPV-PTS slope is presented in Table 5. Inspection of this model shows that after controlling for the covariates, the individual-level predictor, level of violence sustained, was still a significant predictor of PTS symptoms in the sample overall,  $t = 4.39$ ,  $p < .001$ . In addition, the site-level predictors of Hostility to Men and Violent Socialization were significant predictors of differences in the IPV-PTS slopes. Specifically, the greater the site-level mean of Hostility to Men, the steeper the slope between sustaining IPV and PTS symptoms, and the lesser the site-level mean for Violent Socialization, the steeper the slope between sustaining IPV and PTS symptoms. The significant chi square for the slope ( $\chi^2 = 85.57$ ,  $p < .001$ )

Table 4  
*Intercorrelations Among Predictor Variables*

	Age	Relationship length	Sex part of relationship	Sexual orientation	SES	Social desirability	Level of violence
Age	—						
Relationship length	.21***	—					
Sex part of the relationship <sup>a</sup>	.11***	.26***	—				
Sexual orientation <sup>b</sup>	.03	-.02	.02	—			
Socioeconomic status	-.11***	-.03	.00	-.03	—		
Social desirability	.06***	.07***	-.02	-.01	-.03	—	
Level of violence <sup>c</sup>	-.04*	.12***	.09***	-.01	.00	-.18***	—

<sup>a</sup> Sex Part of the Relationship: 1 = Yes, 0 = No; <sup>b</sup> Sexual Orientation: 1 = Heterosexual, 2 = Homosexual; <sup>c</sup> Level of Violence: 0 = None, 1 = Minor only, 2 = Severe.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

indicates, however, that this association still differed among the sites.

Slope estimates provide an indication for how much the PTS symptomatology increased at each site for every one point increase on the level of violence scale. As shown by the coefficient for the slope, the average slope was .06. Thus, for every additional one point increase in the level of violence sustained, the score on the PTS scale, which ranged from 1 to 4, increased by .06. In addition, the variance component for the slope (.004) indicated that there was little variance between sites in the slope estimates. The 95% plausible values for the slope ranged from .052 to .068.

## Discussion

The purposes of this study were to investigate whether there was an association between sustaining IPV and PTS symptomatology among men, and whether this association was influenced by site-level violent socialization and hostility toward men. Evidence was found that the more severe the IPV sustained, the more symptoms of PTS displayed by men. This association varied little across sites, but it was stronger in sites with lower levels of violent socialization and greater levels of hostility toward men.

### *Individual Level Associations Between Sustaining IPV and Symptoms of PTS*

At the individual level, the severity of IPV sustained was positively associated with PTS symptomatology in the men in this study. Al-

though the association significantly differed across sites, the variability in this association was quite low. Thus, it seems that PTS symptoms are associated with sustaining IPV among men in cultures around the world. This finding is consistent with the research on PTS symptoms among cocaine-dependent men who sustained IPV (Dansky et al., 1999) and among a population-based sample from the United States of men who sustained IPV (Coker, Weston, Creson, Justice, & Blakeney, 2005).

It is important to note, however, the correlational nature of this study. That is, it cannot be concluded that sustaining IPV caused the PTS symptoms in these men. Several explanations can exist for the association between these two variables. First, sustaining IPV could have caused PTS symptoms, but it could also be the case that PTS symptoms led the men to become involved in IPV. This conclusion would be consistent with findings from the National Comorbidity Survey, which found that in men, preexisting mental disorders, such as agoraphobia and dysthymia, predicted male IPV victimization (Kessler et al., 2001). There could also be a third variable effect, such as childhood physical abuse, that accounts for the association between sustaining IPV and PTS symptoms. Because experiencing childhood physical abuse is a predictor of sustaining IPV later in life (Stith, Rosen, Middleton, Busch, Lundeberg, & Carlton, 2000) and because childhood physical abuse can lead to early onset mental disorders, such as PTSD (Bryer, Nelson, Miller, & Krol, 1987; Kessler, Davis, & Kendler, 1997; Mullen, Martin, Anderson, Romans, & Herbison, 1996), the experience of childhood physical abuse could lead

Table 5  
*Model Predicting Post Traumatic Stress Symptoms as a Function of the Level of Violence and Site-Level Violent Socialization and Hostility Towards Men*

Fixed effects	Coefficient	SE	t ratio
Model to Predict PTS Symptoms			
Outcome:			
PTS symptoms (Intercept), $\gamma_{00}$	2.07	.05	37.91***
Covariates:			
SES, $\gamma_{10}$	-0.03	.01	-3.45***
Sexual orientation, <sup>a</sup> $\gamma_{20}$	0.10	.05	1.99*
Relationship length, $\gamma_{30}$	-0.01	.01	-2.67**
Social desirability, $\gamma_{40}$	-0.48	.03	-18.36***
Predictor:			
Level of Violence, <sup>b</sup> $\gamma_{50}$	0.06	.01	4.39***
Model for Level of Violence <sup>b</sup> – PTS slope			
Site-Level Predictors of the Slope:			
Mean Hostility to Men, $\gamma_{51}$	0.42	.17	2.41*
Mean Violent Socialization, $\gamma_{52}$	-0.51	.14	-3.54***
Random Effects			
Site Mean, $u_{0j}$	Variance	df	$\chi^2$
Level of Violence – PTS slope, $u_{6j}$	.02	58	427.26***
	.004	56	85.57**

Note. SES, Sexual Orientation, Relationship Length, and Social Desirability are group mean centered and constrained to have equal variances across sites. Level of Violence is group mean centered and allowed to vary across sites. Mean Hostility to Men and Mean Violent Socialization are the site-level predictors for the slope and are grand mean centered.

<sup>a</sup> Sexual Orientation: 1 = Heterosexual, 2 = Homosexual;  
<sup>b</sup> Level of Violence: 0 = No violence victimization, 1 = Minor violence victimization only, 2 = Severe violence victimization.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

to PTS symptoms and selection into relationships characterized by IPV. This kind of third variable effect, however, does not necessarily mean that sustaining IPV has no impact. That is, perhaps an early experience of childhood physical abuse led to symptoms of PTS, and then involvement in a violent relationship reactivated or exacerbated this preexisting condition. Such reactivation and exacerbation have been shown in many different cultures among war veterans and victims of violence who had been exposed to subsequent stressful life events (Berthold, 1999; Garb, Kutz, Bleich, & Solomon, 1987; Kinzie, 1988; Kinzie, Boehnlein, Riley, & Sparr, 2002; Long, Chamberlain, & Vincent,

1994; Maes, Mylle, Delmerse, & Janca, 2001; Solomon, 1995; Solomon, Garb, Bleich, & Grupper, 1987).

A second issue that needs addressing is that although sustaining IPV was a significant predictor of PTS symptoms, it only explained a modest portion of the variance in PTS symptoms. This could be due to the nature of the sample that was investigated. Because this is a sample of university students, it is unlikely that students with severe problems of IPV and/or PTSD will be included because they may not be able to succeed in a college environment. Moreover, studies have shown that higher levels of education attenuate the associations between sustaining IPV and PTSD among men (e.g., Coker et al., 2005). Thus, it is likely that samples of men who seek help for issues of sustaining IPV and/or are less well-educated would show stronger associations between sustaining IPV and PTS symptoms, and future research should investigate this possibility.

Another important caveat to consider is the bidirectional nature of most IPV in this (Straus, 2006) and other studies of IPV (e.g., Kessler et al., 2001; Straus & Gelles, 1990). Although only sustaining IPV was investigated in this study, most people who sustain IPV also use IPV, and therefore, it is unclear whether the associations found in this study are between PTS symptoms and IPV victimization, perpetration, or a more general involvement in violent relationships. Unfortunately, use of IPV cannot be controlled for in the analyses: Because perpetration and victimization are so highly intercorrelated, once one controls for the effects of one on the other, the effects of all other variables become nonsignificant.

### *The Influence of Site-Level Violent Socialization on PTS-IPV Associations*

Previous studies have shown that violent experiences during childhood lead to a higher likelihood of developing PTS symptoms following a subsequent traumatic exposure (Brewin et al., 2000), and cross-cultural PTSD researchers have theorized that violent societies would have higher rates of PTSD following a traumatic event (Marsella & Christopher, 2004). However, in the current study, the opposite was found: the lower the level of violent socialization at a site, the stronger the associa-

tion between sustaining IPV and PTS symptoms. Although this finding is inconsistent with the extant PTSD research, it is consistent with another cross-national study (Lansford et al., 2005) in which the association between childhood physical discipline and adverse psychological outcomes was stronger in sites where physical punishment was less normative. A possible interpretation of the findings from Lansford et al.'s and the current study is that perhaps being socialized in violence leads one to develop coping mechanisms if one later sustains a violent attack. Alternatively, one could view violence as the norm, and therefore, sustaining violence within a romantic relationship would not be viewed as a traumatic incident that had to be dealt with. In fact, events that people find traumatic could differ cross-culturally (de Silva, 1999). Therefore, if a certain culture views IPV as normative, sustaining IPV would not be viewed as traumatic, and it is unlikely that PTS symptoms would ensue. Thus, the extent to which there are cross-cultural differences in the extent to which men who sustain IPV view their experiences as traumatic could influence the extent to which PTS symptoms are associated with sustaining IPV and warrants further research.

### *The Influence of Site-Level Hostility to Men on PTS-IPV Associations*

According to studies of rape victims (Herman, 1992) and war veterans (Johnson et al., 1997), a powerful predictor of the development and maintenance of PTS symptoms is the extent to which victims experience hostility from society following their traumatic exposure. It was, therefore, hypothesized that the association between PTS symptoms and sustaining IPV would be stronger in sites where hostile attitudes toward men were stronger. This hypothesis was supported.

The mechanisms through which hostility toward men in a society leads to increased symptoms of PTS among men who sustain IPV needs further understanding. It is possible that hostility toward men in a society translates to hostility toward men who sustain IPV because IPV has traditionally been viewed as a male-perpetrated act. Therefore, any violence in a relationship might be considered his fault, and men who sustain IPV could internalize this message and

not seek help, or overtly receive this message when they do try to seek help.

Among Vietnam veterans, researchers found that the hostile homecoming they received isolated some of the veterans and prevented them from talking about their experiences and emotions, which increased their self-blame and led to PTSD (Fontana & Rosenheck, 1994; Johnson et al., 1997). Perhaps men who sustain IPV experience a similar pattern. The higher the level of hostility toward men in a society, the more likely it would be that a man who sustained IPV would feel isolated because the violence in the relationship might be viewed as his fault. He could then feel isolated, which could further prevent him from talking about the trauma, leading to a loss of connection with society and an inability to seek out any kind of support systems, either emotional or material. This could, in turn, increase his feelings of self-doubt and guilt, which his partner may have instilled in him in the first place through abusive interactions (Cook, 1997). In combination, these maladaptive patterns could lead to the development of maladjustment that is evident in PTS symptoms (Johnson et al., 1997).

### *Limitations*

Although the current study has considerable strengths in that it included a large sample of men from around the world, there are several limitations that should be considered in future cross-cultural research on men who sustain IPV and PTS symptoms. First, there are limitations in the current study's assessment of PTS symptoms. For example, the measure for this study was a measure of PTS symptoms, and a diagnosis of PTSD cannot be inferred. However, some researchers argue that PTSD is a dimensional, rather than a categorical, construct (Ruscio, Ruscio, & Keane, 2002), and the measure for the current study was congruent with this conceptualization. Furthermore, the symptoms that were assessed were general symptoms and were not linked to any particular traumatic event. Thus, the men's experience of PTS could be due to some other traumatic experience that also put them at risk for sustaining IPV. Another limitation of the PTS measure is that it may not fully capture the spectrum of traumatic symptoms, especially given that it is an 8-item measure attempting to capture a complex psychological

reaction to trauma. However, it is important to note that it is likely that stronger associations between sustained IPV and PTS symptoms would be found with a more comprehensive PTS scale.

Second, the current study used college students as its sample, and college students may not be representative of the population in general; for example, men who are most at risk for sustaining IPV and/or PTS symptoms may never appear in college student samples because the effect of their experiences may be so severe that they would not be able to succeed in the college environment. It should also be noted that the 60 sites that participated in the current study may not be representative of the countries, cities, and sites in which they are located, nor are they exhaustive of all possible cultures from around the world. Thus, future studies should strive to obtain representative data from other cultures as well. However, although the current study used only college students, it has the benefit of providing a test of hypotheses on a cross-cultural level, which no previous studies on this issue have done.

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