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Ruth Belknap

Marquette University, ruth.belknap@marquette.edu

Ashley Marie Schumacher

University of California - San Francisco

Bernal de Pheils

University of California - San Francisco

Janice Carrol Humphreys

Diva Jaramillo

Universidad de Antioquia

See next page for additional authors

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Recommended Citation

Belknap, Ruth; Schumacher, Ashley Marie; Pheils, Bernal de; Humphreys, Janice Carrol; Jaramillo, Diva; Tiwari, Agnes; and Canaval, Gladys Eugenia, "The Relationship of Two Types of Trauma Exposure to Current Physical and Psychological Symptom Distress in a Community Sample of Colombian Women: Why Interpersonal Violence Deserves More Attention" (2010). *College of Nursing Faculty Research and Publications*. 94.

https://epublications.marquette.edu/nursing_fac/94

Authors

Ruth Belknap, Ashley Marie Schumacher, Bernal de Pheils, Janice Carrol Humphreys, Diva Jaramillo, Agnes Tiwari, and Gladys Eugenia Canaval

Marquette University

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Health Care for Women International, Vol. 31, No. 10 (October 2010): 946-961. [DOI](#). This article is © Taylor & Francis (Routledge) and permission has been granted for this version to appear in [e-Publications@Marquette](#). Taylor & Francis (Routledge) does not grant permission for this article to be further copied/distributed or hosted elsewhere without the express permission from Taylor & Francis (Routledge).

The Relationship of Two Types of Trauma Exposure to Current Physical and Psychological Symptom Distress in a Community Sample of Colombian Women: Why Interpersonal Violence Deserves More Attention.

ASHLEY MARIE SCHUMACHER

Department of Community Health Systems, University of California, San Francisco, San Francisco, California

DIVA JARAMILLO and TULIA URIBE

Escuela de Enfermería, Universidad de Antioquia, Medellín, Colombia

PILAR BERNAL DE PHEILS

Department of Family Health Care Nursing, University of California, San Francisco, San Francisco, California

WILLIAM HOLZEMER

Department of Community Health Systems, University of California, San Francisco, San Francisco, California

DIANA TAYLOR

Department of Family Health Care Nursing, University of California, San Francisco, San Francisco, California

AGNES TIWARI

School of Nursing, The University of Hong Kong, Hong Kong, China

GLADYS EUGENIA CANAVAL

Escuela de Enfermería, Facultad de Salud, Universidad del Valle, Santiago de Cali, Colombia

MARIA EUGENIA MENDOZA FLORES

National Institute of Perinatology, Mexico City, Mexico

RUTH ANN BELKNAP

College of Nursing, Marquette University, Milwaukee, Wisconsin

Abstract:

Our purpose in this study was to examine the relationship between interpersonal violence and background traumas and symptom distress in a community sample of Colombian women (N = 217). We utilized the Life Stressor Checklist-Revised (LSC-R) to measure lifetime interpersonal violence (IPV) and background trauma exposure and the Brief Symptom Inventory (BSI) to measure current symptom distress. Although both exposures were common in this sample, IPV was strongly correlated with current symptom distress; background traumas made no unique contribution to the variance in current symptom distress. Based on our findings, it is suggested that interpersonal events may be particularly distressing.

In our study we describe the problem of IPV in a sample of Colombian women and its association with symptom distress. Events of IPV are common in the lives of women around the world and associated with negative mental and physical health consequences that last long after the abuse has ended ([16]). Although Colombia has long been recognized as having a "culture of violence" ([2]), we know very little about the occurrence of IPV or its health effects in the context of Colombian women.

The World Health Organization (WHO) has declared that IPV is an urgent global health concern that affects millions of individuals worldwide ([30]). Interpersonal violence (IPV) is associated with negative physical and mental health consequences such as symptom distress, depression, chronic pain, and post-traumatic stress disorder (PTSD; [12]). These sequelae are cumulative and last long after the abuse has ended ([19]; [20]). Exposure to IPV appears to cause more severe health consequences than other types of trauma exposure ([7]), and research suggests that women are at higher risk than men to develop associated negative health consequences ([37]). Although IPV is a global health issue, few international research studies have been conducted to describe the full range of IPV events and their effects ([40]; [51]).

LIMITATIONS OF EXISTING LITERATURE

The trauma literature on IPV has several methodological limitations. First, the samples in the United States largely have been limited to clinical and college participants ([24]; [33]; [42]). Second, the definition and measurement of IPV exposure and the dependent variables studied have lacked uniformity, making comparisons across studies difficult ([1]; [4]; [8]; [13]; [39]). For example, many IPV studies focus on single events or types of IPV (e.g., rape and intimate partner violence) without screening for other trauma experiences in a person's history, making it impossible to link exposures and outcomes ([43]). Multiple researchers have focused on the dependent variable of PTSD, which some authors have theorized to be the mediator between trauma exposure and health outcomes ([43]), while others view it as an outcome of trauma exposure ([8]; Pimlott-Kubiak & [16]; [42]). [27], however, concluded that not all traumatized women experience PTSD and that emphasis on it alone overlooks the full range of psychological symptoms that fall outside of that syndrome. Furthermore, work by

medical anthropologists suggests that PTSD symptoms do not have the same meaning across settings, placing into question the usefulness of such narrow diagnoses in other cultures ([5]; [29]).

International Perspective

Despite the WHO's declaration of IPV as an urgent global health concern ([30]), few international researchers have attempted to describe the full range of IPV events and their effects ([40]; [51]). As part of a public health approach to IPV, the WHO advocates defining and monitoring of the problem, with the first step being to reach consensus on global standards of behavior as they relate to human rights ([30]). The global prevalence of IPV against women, however, has been difficult to measure due to cultural variance, lack of systems to report such occurrences, and, similar to the U.S. literature, inconsistencies in definition and measurement ([30]).

Colombia, a country in northwestern South America, is no exception to the paucity of studies outside of the United States that describe the full range of IPV events and their effects. Intimate partner violence is the most frequently studied type of IPV ([18]; [32]; [45]). In one investigation, [36] investigated the link between IPV exposure and health outcomes and reported a higher likelihood of unintended pregnancy in women who reported intimate partner violence. This is in the context of a country that has endured 40 years of armed internal conflict that continues even today ([49]). Although internal security has improved since 2001, human rights groups continue to scrutinize Colombia for abuses perpetrated by guerrillas and paramilitary forces ([3]; [25]). For example, the [34] reports that 36% of internally displaced women, a population considered highly vulnerable to violence ([2]), have been raped. Before 2001, Colombia was known as the "kidnap capital of the world" and had the highest homicide rate of any country worldwide ([21]; [48]). In this "culture of violence" ([2]; Ceasar, 2007), little is known about IPV or its effects on Colombian women.

In summary, women around the world commonly experience IPV, which is associated with negative mental and physical health consequences. Interpersonal violence (IPV) is suggested to cause greater morbidity than other types of trauma exposures not interpersonal in nature, and these effects are cumulative and persist long after the violence has ended. Describing the problem of IPV and its effects has been limited internationally, including in Colombia where the presence of violence has been widely acknowledged.

In accordance with the public health approach advocated by the WHO, we will describe the occurrence of IPV in a community sample of Colombian women using an internationally agreed-upon definition and explore the associations among IPV exposure, noninterpersonal or unintentional traumatic events, and symptom distress.

CONCEPTUAL FRAMEWORK

[10] ecologic systems theory provides the conceptual framework for this study. Bronfenbrenner posits that an individual interacts within a series of nested environmental "layers": (a) the microsystem that includes an individual's biology and family; (b) the mesosystem that is two microsystems interacting; (c) the exosystem, external environments that indirectly influence the microsystem; and (d) the macrosystem, the greater sociocultural context. Within this framework, traumatic events are viewed as occurrences that affect individuals within a larger sociocultural context. An individual's exposure to trauma and response to it are shaped by the microenvironment of her or his biology and family unit. Her or his microsystem interacts with the mesosystem of the community, which is influenced by the macrosystem of the greater socio-cultural context. In turn, an individual's response to IPV affects the micro-, meso-, and macrosystems in which she or he exists. Because of these interactions, examining individual, community, and cultural variables is extremely important when researching and devising interventions for trauma.

METHODS

This study is a secondary analysis of a dataset that used a cross-sectional design. We seek to describe (a) the occurrence of IPV and background trauma (BT) in a community sample of Colombian women and (b) the relationships among IPV exposure, (c) BT exposure, and (d) symptom distress among the women. We hypothesized that IPV and BT will be positively and significantly associated with symptom distress and that IPV will be associated with significantly more symptom distress than BT.

Participants

We recruited a community-based sample of 217 female volunteers living in Medellín, Colombia, using organizational announcements, community worker referral, and snowball sampling. Women aged 18 and older who could read and understand Spanish were eligible to participate in the study.

Procedure

Our study was approved by the Universidad de Antioquia in Medellín, Colombia, and the Committee on Human Research of the University of California, San Francisco. All procedures were conducted by trained Colombian, Spanish-speaking women. They explained the study to women who were interested in participating and collected demographic information, such as economic status, age, level of education, employment, monthly income, and marital status, if they wished to enroll. Participants then were presented with Spanish versions of the BSI ([17]) and the LSC-R ([52]), which they completed independently.

Measurements

Four independent variables are included in the analysis: age, socioeconomic status, IPV, and BT. One dependent variable, current symptom distress, is measured.

Age and socioeconomic status were measured using an investigator-developed demographic questionnaire. Socioeconomic status was determined by the participants' report of their socioeconomic strata as categorized by their local government. Developed in Colombia in the 1980s, this categorization system uses dwelling and neighborhood characteristics (e.g., building materials used, the presence of a bar or factory on the same block; [41]) to determine household rates and to grant allocations for public utilities like gas, water, and electricity. Those in stratum 1, or "low-low," receive the largest subsidy for utilities; those in stratum 6, or "high," must contribute to the cost of their utilities ([41]). Although the system is not a direct measure of income, it provides information about the quality of the environment in which the participants live.

We measured IPV and BT with the LSC-R, a 30-item index of lifetime trauma exposure whose validity has been established for use with diverse populations of women ([11]; [52]). The LSC-R assesses lifetime exposure to traumatic and stressful experiences and is tailored to the experiences of women ([52]). As part of the larger study, the LSC-R was forward and backward translated into Colombian Spanish and assessed for cultural appropriateness.

For the purpose of this study and following the work of [31], we created a summary variable to combine single-item data from the LSC-R into a meaningful aggregate to examine effects. Guided by the WHO's (2002) IPV definition, we chose 10 LSC-R items that use behavior-specific language to assess for lifetime exposure to physical, sexual, and psychological abuse and neglect. The sum of IPV event types reported by the participants represents lifetime IPV exposure. Thus, scores can range from 0 to 10. Accounting for the occurrence of the full range of lifetime IPV exposures in this way avoids looking at isolated events, the responses to which are affected by previous events ([24]). Of note, this does not replicate the work of McHugo and colleagues because they administered a modified version of the LSC-R and used a different operational definition of IPV, which was

termed "interpersonal abuse." The main difference between their study of IPV and ours is their inclusion of witnessed events ([31]).

Items from the LSC-R similarly were chosen to create a summary variable for BT. Six traumatic events were chosen, including only those that either are not directly experienced (e.g., witnessed events) or are inherently unintentional (e.g., serious accident, earthquake, the sudden death of loved one).

The BSI is used to measure current symptom distress ([17]). This instrument, an abbreviated, 53-item version of the 90-item Symptom Checklist-90, is a self-report questionnaire designed to assess the occurrence of and distress related to several symptoms, including somatic symptoms (e.g., pain, nausea, feeling faint/dizzy, poor appetite, feeling hot/cold, weakness or numbness). On a 5-point scale from 0 (*not at all*) to 4 (*extremely*), participants are asked to rate their distress about particular symptoms in the "past week and today" ([17]). The BSI is structured around nine, primary, symptom dimensions, including somatization, obsessive compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Although not validated to stand alone, the primary symptom dimensions are combined into three global indices for scoring purposes: (a) the Global Severity Index (GSI), which accounts for the number of symptoms and their severity; (b) the Positive Symptom Total (PST), which reports the number of symptoms; and (c) the Positive Symptom Distress Index (PSDI), which is an intensity measure adjusted for the number of symptoms present. For the purpose of this study, current symptom distress was measured by the GSI, which is calculated by summing the responses to obtain a raw score and dividing it by the number of questions answered. The raw score then is converted into a standardized T score for comparison with normative groups. Standardized T scores ≥ 63 are considered cases and indicate the need for further evaluation ([17]). The most sensitive of the three global indices, the GSI, has a test-retest reliability of 0.90 ([17]) and had a high consistency reliability in this sample (Cronbach's $\alpha = 0.97$).

Analysis

To describe the sample and answer the first research question, descriptive statistics are provided, including means and standard deviations (SDs) for all quantitative values and frequencies and percentages for categorical values. To answer the second research question and test the study's hypotheses, a multiple regression analysis was conducted. This analysis determines how well the four independent variables of age, socioeconomic stratum, IPV, and BT explain the total variance of current symptom distress as measured by the BSI's GSI.

RESULTS

Descriptive Statistics

Two hundred seventeen women met the study criteria; however, seven participants were not included in the multiple regression analyses because of partially missing data. Women in the sample had a mean age of 37.5 ($SD = 15.5$) years, ranging from 18 to 79 years old (see Table 1). Nearly 80% ($n = 173$) reported secondary education or higher, and half of those women (48%, $n = 80$) had completed some tertiary education, including technical school, undergraduate, or graduate coursework. Only 31% of the women reported formal employment ($n = 68$), while 28% ($n = 61$) reported that they are homemakers or engage in other informal work. One in five ($n = 48$) participants was a current student, and the remainder of the participants ($n = 32$) were either retired or unemployed. Reports of the women's socioeconomic status were concentrated in strata 2 and 3, corresponding to "low medium" and "medium low." Almost half of the women (49%) reported being single, 33% reported a permanent partner, and the rest (13%) were divorced, separated, or widowed.

TABLE 1 Demographic Characteristics of the Full Community Sample of Colombian Women (N = 217)

	n	%	M	SD
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Age in years			37.5	15.5
Last grade completed (N = 212)				
Primary school	39	18.0		
High school	93	42.9		
Technical school	17	7.8		
University	50	23.0		
Postgraduate	13	6.0		
Employment status (N = 209)				
Unemployed	19	8.8		
Homemaker	45	20.7		
Informal worker	16	7.4		
Employed	68	31.3		
Student	48	22.1		
Retired	13	6.0		
Socioeconomic status (N = 217)				
Very poor	24	11.1		
Poor	68	31.3		
Lower middle	72	33.2		
Upper middle	24	11.5		
Wealthy	16	7.4		
Very wealthy	12	5.5		
Relationship status (N = 207)				
Single	107	49.3		
Permanent partner	71	32.7		
Separated/divorced	19	8.8		
Widowed	10	4.6		

Note. N variations are due to missing data.

Occurrence of Trauma

Nearly all of the participants (95%) reported some exposure to IPV or BT during their lifetime, and most women (77%) reported IPV specifically (see Table 2). Of the 167 women who reported IPV, most (83%) reported between one and three types of exposure (range 0 to 10), and the most frequently reported events were physical attack by a stranger ($n = 115$) and emotional abuse ($n = 76$). The most frequently reported BT event was the sudden death of a loved one, experienced by nearly 60% of the sample ($n = 129$). Witnessing a serious accident ($n = 100$) and witnessing a physical attack ($n = 92$) were the next-most-reported events. Just nine women reported no trauma exposure during their lifetime.

TABLE 2 Descriptive Statistics on Interpersonal Violence and Background Trauma

	n	%
Exposure groups		
No trauma	9	4.0
IPV exposure only	13	6.0
BT exposure only	39	18.0
IPV and BT exposure	150	71.0
Interpersonal violence		
Emotional abuse	76	35.0

Physical neglect	27	12.4
Physical attack by stranger	115	53.0
Physical abuse (child)	40	18.4
Physical abuse (adult)	38	17.5
Sexual harassment	25	11.5
Sexual abuse (child)	28	12.9
Sexual abuse (adult)	13	6.0
Rape (child)	9	4.1
Rape (adult)	7	3.2
Background trauma		
Serious disaster	40	18.4
Witnessed serious accident	100	46.1
Serious accident	52	24.0
Sudden death of loved one	129	59.4
Witnessed family violence	59	27.2
Witnessed physical attack	92	42.4

Note. IPV = interpersonal violence; BT = background trauma.

Symptom Distress

Raw GSI scores were converted into standardized T scores according to the adult, nonpatient, female norm group ([17]). The overall sample of women had a mean T score of 67. The women were then divided into two groups based on IPV exposure: those with some IPV exposure ($n = 163$) and those with none ($n = 48$). The mean T score for the IPV-exposed group was 69; the mean T score for the group with no IPV exposure was 66. Tests of independence (the chi-square test or t test) revealed no significant differences between the two exposure groups in age, education, employment, socioeconomic status, or relationship status.

Relationships Among Study Variables

To evaluate the relationships among study variables, Pearson correlations were calculated and are summarized in Table 3. IPV and BT were significantly correlated as were BT and age.

TABLE 3 Correlations Among Variables Predicting Symptom Distress

	GSI	IPV	BT	Age	Stratum
GSI	—				
IPV	.410	—			
BT	.128	.302	—		
Age	-.172	-.042	-.134	—	
SES	-.206	-.086	.020	.024	—

Note. GSI = Global Severity Index; IPV = interpersonal violence; BT = background trauma; SES = socioeconomic status.

We conducted a multiple regression analysis to determine how well four independent variables explained the total variance in symptom distress. The analysis was run without seven of the original participants due to partially missing data. The overall model was significant, explaining 22.1% of total GSI variance ($R^2 = .221$, $F 4, 205$, $p < .001$; see Table 4). In investigating the unique contribution of each of the four variables, IPV accounted for 13.84% of the variance of GSI while holding the other variables constant ($p < .001$). The R^2 change value for BT was .0001 and not significant ($p = .909$), confirming that BT did not uniquely explain any portion of the variance in GSI. Age and stratum explained 2.28% ($p = .015$) and 2.8% ($p = .007$) of the total variance, respectively.

TABLE 4 Multiple Regression Summary for Variables Predicting Current Symptom Distress (N = 211)

Source	R ²	β	ΔR ²	df	F	p
Overall	.221			4, 205	14.530	<.001
IPV		.392	.138	1, 205	36.330	<.001
BT		-.077	.001	1, 205	.013	.909
Age		-.153	.023	1, 205	6.017	.015
SES		-.169	.028	1, 205	7.415	.007

Note. The N is 211 because seven subjects were lost due to missing data.

IPV = interpersonal violence; BT = background trauma; SES = socioeconomic status.

DISCUSSION

In this community-based sample of Colombian women, a model with age, socioeconomic status, IPV exposure, and BT exposure explained 22.1% of the total variance in current physical and psychological symptom distress (i.e., GSI). IPV exposure appeared to be more detrimental than noninterpersonal events in this sample, which reflects the findings of previous investigators, including the work of Green and colleagues (2000; *N* = 2,507) that placed female college students in groups based on trauma exposure and found women in the IPV groups had significantly more symptom distress than women without IPV exposure (i.e., no trauma exposure or noninterpersonal events only), as well as the work of [28] that compared lifetime rates of PTSD in individuals exposed to IPV versus individuals reporting only noninterpersonal trauma, finding significantly higher rates among the IPV exposed women (21% to 49% versus 5% to 9%). Exposure to BT, however, did not contribute to the explained variance in current symptom distress beyond that contributed by IPV alone. This is in contrast to the findings of some researchers, such as in the South Africa Stress and Health Study ([51]) in which investigators found a significant association between BT events, such as natural disasters and the death of a loved one, and symptom distress. Similar associations have been reported by other investigators ([6]; [39]), though [24] also reported no difference in symptom distress between women reporting no trauma history and women reporting one noninterpersonal event. Our findings support results from previous investigators who suggest that IPV is higher impact than other types of trauma exposure, which may be due to the intentional rather than accidental nature of IPV exposures ([23]; Herman, 1992). Our results, however, question the significance of BT exposure in this population.

The 95% prevalence of at least one IPV or BT exposure in this sample is high, even when compared with estimates from the South African study in which [51] reported that 75% of their sample (*N* = 4,351) had experienced at least one IPV or BT event in their lifetime. Their sample, however, did include both men and women. The prevalence of IPV in particular in this sample is 77%, compared with the 42% to 75% typically reported in U.S. samples ([24]; [37]). Based on these findings, it is suggested that both IPV and BT exposures may be more prevalent in this sample when compared with published data from other nations, which might in part be explained by the effect of armed conflict in Colombia over the last 40 years on this sample with a mean age of 37.5; however, further study is required to confirm this interpretation.

In this sample of women, the most frequently reported IPV events were physical attack by a stranger (53%) and emotional abuse (35%). In one nationally representative U.S. sample ([44]) the most frequently reported IPV events are attempted or completed rape (20%), physical assault (19%), and child abuse (18%). The most frequently reported BT events in our sample were the sudden death of a loved one (59%), witnessing a serious accident (46%), and witnessing a physical attack (42%). Similarly, in Breslau and colleagues' (1998) study of a nationally representative U.S. sample, the most frequently reported event was also sudden death of a loved one (60%), witnessing someone being killed or seriously injured (29%), and experiencing a serious accident (28%). [51] also reported the death of a loved one (38%) more often than any other BT event in their South African

study of both men and women. Further study of nationally representative Colombian samples is required to more fully understand the patterns of IPV and BT events to inform intervention strategies.

Overall, this sample of Colombian women is highly distressed. The mean T score for the full sample ($m = 67$) exceeds 63, the criteria for "caseness" indicating severe distress ([17]). Ninety-two percent ($n = 195$) of women scored in this range, which would suggest the need for additional clinical evaluation ([17]). The women in the IPV exposure group were even more distressed than those in the group with no IPV exposure, which is not surprising based on the findings of multiple researchers, which also report associations between IPV exposure and symptom distress ([24]; [28]). Clearly, health care professionals need to explore both women's trauma exposures and distress so that they can receive the care they need. Even if this finding represents a cultural phenomenon or the effect of other variables outside the scope of this study, the pervasiveness of these women's distress requires further exploration.

With regard to the demographic characteristics of our sample, the women are highly educated when compared with national survey data ([46]; [47]). For example, fewer than 1% of university-aged women were enrolled in undergraduate classes in 2004 ([47]), compared with 23% of our sample who reported their last grade completed was at the university level. The clustering of participants in strata 2 and 3, however, closely resembles reported national distributions ([41]) and suggests that the women in this sample may be more representative of the general population of Colombian women than the educational data alone suggests. Studies of nationally representative samples, especially of the sociodemographic risks of IPV exposure and its effects in this population, is required because investigators have noted differential exposure to trauma based in part on educational status ([35]), among other socioeconomic characteristics. Further study also should examine internally displaced women, a group considered at very high risk for IPV ([2]).

Our study is the first to describe the full range of IPV events in a community sample of Colombian women. Based on our findings, we purport that IPV is a real threat to the well-being of these women. Further research is needed in multiple areas: an in-depth description of IPV and its effects in Colombia, the development of intervention strategies, and the investigation of other health outcomes to further refine interventions. As discussed, studies should use nationally representative samples and samples of internally displaced women to fully describe the sociodemographic risk factors for trauma, the associated health effects, and the financial burden of those health effects. This data would inform policy reform.

Culturally appropriate intervention strategies to prevent the occurrence of IPV and to treat exposed women require further development. Based on our findings and those of previous investigators (Breslau, et al., 1998; [28]), these efforts should address interpersonal events, which appear to be more detrimental, as well as women who report multiple trauma exposures because the dose-response relationship between IPV exposure and health outcomes has been well documented in the U.S. literature ([19]; [20]) and these women may require specific interventions.

Although symptom distress is a sensitive outcome measure, future researchers should describe the burden of trauma in terms of specific morbidities as seen in the U.S. literature, where associations between IPV exposure and specific mental and physical health outcomes, such as alcohol abuse, chronic pain, and gastrointestinal disorders, have been reported ([15]; [37]; [38]). These findings would further inform interventions to ameliorate the negative health consequences of IPV, such as increasing awareness among health care personnel to promote screening and trauma-informed health care as advocated in the United States ([50]). The cultural implications of such interventions are unknown at this time, however, and would require further investigation.

This study has limitations. First, it is a secondary analysis of an existing dataset that was not collected specifically for the purposes of this study. Second, as is the case for any study that asks its participants to recall distant

events (i.e., childhood), the data are subject to recall bias. Due to the cross-sectional design, it is impossible to draw conclusions about causation, only association, between the independent and dependent variables. Third, the study's convenience sampling technique may be flawed. We know that our sample was more educated than national averages, but we do not know if the participants also differ from the general Colombian female population in important ways, limiting the generalizability of the findings. Nonetheless, we feel that our more educated sample strengthens the study's findings because education has been suggested to be protective ([35]). Finally, the study data also may be confounded by other community and political violence that was not captured in the measurements of this study.

CONCLUSION

Based on our study findings, it is suggested that trauma exposure is a pervasive problem that is associated with symptom distress in this community sample of Colombian women, and that IPV exposure may be particularly distressing when compared with BT. Similar to other reports of the link between IPV and symptom distress, IPV appears to be a real threat to the well-being of these women. Culturally appropriate interventions to prevent its occurrence and ameliorate the associated physical and psychological symptomatology are needed.

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Footnotes

* $p < .05$.

*Coefficients are significant at $p < .05$.