



Review

# Psychological intimate partner violence: the major predictor of posttraumatic stress disorder in abused women

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**Abstract**

Intimate partner violence (IPV) significantly impacts women mental and physical wellbeing and therefore represents a worldwide public health problem. A clear association between IPV and increased risk to develop posttraumatic stress disorder (PTSD) has been documented. However, few studies examined how different features of IPV (physical, psychological, sexual) interact with other traumatic stress experiences (physical, psychological and sexual childhood abuse and adulthood victimization by other/s than the partner) in determining PTSD. Women abused by the partner ( $n = 75$ ) were compared with non-abused control women ( $n = 52$ ). Information about sociodemographic profile and relevant personal characteristics was obtained through structured interviews. A comprehensive questionnaire was designed for a face-to-face interview in order to obtain detailed information about duration and frequency of the different types of violent acts above mentioned. The incidence and severity of symptoms of current PTSD were assessed with Echeburua's Severity of Symptom Scale of Posttraumatic Stress Disorder, a structured interview based on DSM-IV criteria. Women suffering from IPV had a significantly higher rate of PTSD symptomatology as compared to control women, whereas childhood abuse variables did not explain PTSD score variance. In addition, the severity of IPV was significantly and positively correlated with the intensity of PTSD symptoms. Women involved in an abusive relationship were more frequently exposed to other experiences of adulthood victimization, suggesting that their higher PTSD vulnerability could be a result of cumulative traumatic experiences. A relevant result of the correlation analysis was the strong, positive association between PTSD and each different type of IPV. In particular, the psychological component of intimate partner violence was the strongest predictor of posttraumatic stress disorder. This study underlines the importance of separating the effects of the different types of intimate partner abuse when taking into account its effects on women mental health.

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*Keywords:* Intimate partner violence; Psychological abuse; Child abuse; Adulthood victimization; Posttraumatic stress disorder; Women; Individual differences

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## 1. Introduction

Intimate partner violence (IPV) is a worldwide public health problem that significantly impacts women mental and physical well-being [1]. A woman living with a violent intimate partner is usually exposed to repetitive acute episodes of physical, psychological and/or sexual violence [2]. In addition, IPV is characterized by constant risk and lack of control, even when there is no actual traumatic event occurring [3]. It has a high prevalence and incidence among the female population of virtually all world countries, regardless of race, education, religion or economic status. During the last three decades, the number of studies on the effects of intimate partner violence has increased tremendously. Most of these studies indicate that short- and long-term effects on women physical and mental health can be extremely serious [4–13].

### 1.1. Consequences of intimate partner violence on women mental health

Psychological sequelae of traumatic experiences within intimate relationships can be described within three categories: (a) psychological symptoms, including those referred to as PTSD, as well as other indicators of psychological distress and dysfunction; (b) cognitive changes, including attributions and attitudes; and (c) disturbances in relationship skills beyond those used within an abusive relationship [14].

A number of mental disturbances have been described in physically abused women: posttraumatic stress disorder (PTSD) [1,2,8,14–21], depression [1,4,8,22–30], anxiety [25,27,31], sleeping disturbances [32,33], eating disorders [34], social dysfunction, suicide ideation and attempts [7,35,36], and increased likelihood to develop substance abuse behavior [1,13,24,27,28,37–40].

### 1.2. PTSD and intimate partner violence

Posttraumatic stress disorder may occur as a result of traumatic events that have either natural or human origin [41]. Characteristic features of PTSD include reexperiencing the traumatic event, emotional numbness or avoidance, and increased arousal [41]. PTSD is one of the most frequent mental health consequences of IPV, with a mean prevalence of 64% in abused women [24]. Cascardi and colleagues reviewed a number of studies on abused women finding that the rate of PTSD ranged from 31 to 84%, with modal rates ranging between 45 and 60% [42]. Other studies examining posttraumatic stress disorder in battered women have identified a strong, positive correlation between severity of abuse and intensity of PTSD symptomatology [2,14,15,18,43–45]. Moreover, among abused women PTSD symptoms can last long after the end of the abusive relationship [2].

Several studies confirm the widespread idea that psychological abuse frequently coexists with physical

abuse by the intimate partner [46–48]. Psychological abuse often includes threats to physical and psychological health, isolation of the victim and attempts to induce humiliation. Such studies also underline that psychological abuse has a unique and sometimes even greater impact than physical abuse on women's psychological functioning, particularly within the areas of depression and PTSD [10,13,31,37,46,47,49–51]. Subjective reports by women involved in violent relationships also suggest that women perceive psychological abuse as having a greater adverse effect than physical abuse [47,49,52]. Indeed, psychological abuse seems to have its independent effect on the development of PTSD [33,49,53–56]. After statistical removal of the contribution of physical violence, increased levels of psychological abuse have been positively related with increased traumatic stress and psychological symptoms [50,57,58].

Psychological and physical abuse are frequently accompanied by sexual abuse in violent relationships. It has been estimated that sexual abuse occurs in approximately 40% of all cases of battering [59]. Women that are both physically and sexually abused have a higher incidence of mental disturbances than those that are 'only' physically abused [10]. IPV-related sexual assault has been associated with PTSD [60] and it has been reported that sexual violence severity explains a significant proportion of the variance of PTSD symptoms, beyond what was already accounted for by physical violence intensity [61].

### 1.3. Childhood abuse, intimate partner violence and PTSD

Women reporting childhood abuse have been shown to have increased vulnerability to physical and emotional IPV in adulthood [68,76–79]. Although the literature is somewhat controversial on this issue, [80], a recent study on over 1200 subjects demonstrated that women in this sample who reported repeated severe beatings during childhood also had more than three times the risk of being victim of domestic violence as adults [81].

Another frequently addressed issue is the role of childhood abuse on women adult psychological and physical health [62–69]. Childhood abuse is related to increased vulnerability to a range of mental and psychosocial problems in adulthood [63,69–71]. In particular, childhood sexual abuse has longterm psychological effects increasing adult vulnerability to develop posttraumatic stress symptoms, the incidence and severity of which depend on the type, duration and frequency of child sexual abuse experienced [72,73]. The likelihood of having PTSD symptoms in adulthood is generally increased when child sexual abuse consisted in multiple abusive episodes involving sexual intercourse [74] and was perpetrated by a relative or significant other (such as stepfather, priest, teacher, etc.). Sexual, emotional and physical abuse frequently occur together in a multifarious, adverse childhood environment. Even so, the negative effects of childhood physical and sexual abuse are extremely variable

among individuals and can be mitigated by a number of factors including the victim's subjective perception of the events and the available social support [75]. There are inconsistencies also in the results of research on the relationship between childhood abuse and PTSD. While Duncan and colleagues [82] noted that those who reported a history of childhood physical abuse were significantly more prone to have a lifetime history or current PTSD, Rowan and colleagues [83] found that it was childhood sexual rather than physical abuse to predict a higher incidence of PTSD. Other investigators stressed that the combination of physical and sexual abuse during childhood may induce higher levels of PTSD, psychopathological symptomatology and risk of adult victimization than either sexual or physical abuse alone [77,84].

### 1.4. Aims of the study

There are only a few studies that carefully separated the contribution of each different violent experience (childhood abuse, adulthood victimization, and intimate partner violence) to the development of PTSD. The current study was aimed at addressing this important issue, by measuring PTSD symptomatology in Spanish women victims of intimate partner physical/psychological/sexual violence and by analyzing it in relationship with other lifetime violence experiences. Specifically, significantly greater histories of childhood abuse were expected in the lives of women who have experienced IPV compared with those who have not. We also expected that the women who were victims of intimate partner violence were also more often exposed to adulthood victimization by other/s than the partner. Moreover, we aimed at assessing which of these three factors (childhood abuse, adulthood victimization by other/s than the partner and intimate partner violence) had the strongest impact on the development of PTSD. Finally, we disentangled the individual contribution of the three components of IPV (physical, psychological and sexual) to PTSD symptomatology.

## 2. Methods

### 2.1. Subjects and procedure

A sample of 127 women from the Valencian Community of Spain was recruited between 2000 and 2002 for this cross-sectional study, as part of a larger research project on the impact of IPV on women's health. Women victims of IPV were recruited from the 24-h Centers for Helping Women, an outpatient counseling agency for battered women located in the three provinces of the Community (Alicante, Castellon and Valencia). They had to be physically abused by the intimate male partner during a cohabiting relationship in order to be included in the sample. The control group consisted of women who lived in

a non-violent intimate partner relationship and were recruited through Women's clubs. All participants were of Spanish nationality and signed an informed consent at the outset. The study was approved by the University of Valencia Research Ethics Committee.

## 2.2. Assessment measures: interview and questionnaires

Four trained female psychologists asked women about their lives and health using a structured interview. Each woman was interviewed 4–6 times by the same psychologist, each session taking approximately 1.5 h. The mean period of time ( $\pm$ S.E.) necessary for full data collection was  $18.13 \pm 3.96$  days for the control group and  $59.76 \pm 9.35$  days for the abused women group. A comprehensive questionnaire was designed for a face-to-face interview. The majority of questions were designed to collect objective reports of facts. The questionnaires from which information for the present study was obtained are described as follows.

### 2.2.1. Sociodemographic variables

Data about age, level of education, employment and number of children were obtained.

### 2.2.2. Control variables

We also collected information about (i) psychopharmacological treatment (antidepressants, anxiolytics, hypnotics and tranquillizers) at the time of the interview, and (ii) psychiatric and psychological treatment during the exposure to intimate partner violence. In non-abused women, psychiatric and psychological treatment were referred to the time of cohabitation with the non-violent partner.

### 2.2.3. Violence perpetrated by an intimate male partner (IPV variables)

A questionnaire was constructed to obtain detailed information about the different types of violence (physical, sexual and psychological) perpetrated by the batterer. Each type of violence consisted of one or more of the acts described below. Women were asked to answer 'yes' or 'no' to the incidence of each act. When the woman answered positively, she was asked about duration, frequency and use of coercive instruments in every type of violence, in order to obtain a severity marker of the violence experienced.

- (a) *Physical violence*, including punches, kicks, slaps, pushes, bites, and strangling.
- (b) *Sexual violence*, including: (i) forced sex (vaginal or anal penetration, oral sex from her to him or from him to her, objects inserted in vagina or anus), (ii) forced to have homosexual sex, (iii) forced sex with animals, (iv) forced to prostitute herself, (v) forced to have sex in public, (vi) physical violence during sexual intercourse (bites, kicks, blows and slaps), (vii) threats to hit the woman or children if rejecting sex, (viii) threats with knives, guns or other weapons in order to have sex, (ix)

involvement of children in forced sex or witnessing sexual attacks and (x) forced use of pornographic films and photos.

- (c) *Psychological violence*, including: verbal attacks (insults, humiliations), control and power (isolation from family and friends, impeding decision-making, economic abandonment), pursuit and harassment, verbal threats (woman and family's life threatened, threats regarding the custody of children, intimidating phone calls) and blackmail (economic or emotional).

The endorsement of any of the acts of physical violence was used as criterion to assign subjects to the abused women group. On the contrary, women were excluded from this group if they answered negatively to all of the acts of physical abuse, even though they received other types of violence (psychological or sexual). In this group of respondents, Cronbach's alpha for internal consistency was 0.88. In order to evaluate the influence of recent IPV, they were also asked if they had been physically, psychologically or sexually abused during the last year. The maintenance of the cohabitation with the partner at the time of the interviews was also considered. Items about sexual and psychological abuse (perpetrated by the partner towards the woman) that involved use of children were not omitted in the case of women without children (7% of IPV group), but scored as '0'. Control women were asked the same questions in order to ensure that they had had no experience of violence in any intimate partner relationship. Those subjects who answered positively to any question relative to physical, psychological and sexual violence were excluded from the control group.

### 2.2.4. Lifetime history of victimization (victimization variables)

- (a) *Child abuse*. Women were asked about the incidence, duration, frequency and use of coercive instruments to perpetuate physical, sexual or psychological abuse during their childhood (prior to 14 age). *Physical abuse* was defined as above (see Section 3). *Sexual abuse* included one or more of the following acts: forced sex, forced to touch a male's sexual organs or being touched, forced exposure to the display of sexual organs, and threats of forced sex. *Psychological abuse* was defined as above (see Section 3), but "threats regarding custody of children" and "impeding decision-making" were not considered.
- (b) *Adulthood victimization*. Women were asked about their experience of violence, i.e. incidence, duration, frequency and use of coercive instruments during adulthood (after age 14), independently of their being battered by the intimate partner. Physical, sexual and psychological violence were defined as described above for childhood abuse.

### 2.2.5. Posttraumatic stress disorder

The incidence and severity of symptoms of PTSD at the time of the study were assessed with Echeburua's Severity of Symptom Scale of Posttraumatic Stress Disorder [85]. It is a structured interview based on DSM-IV criteria [41]. The instrument has a high internal consistency with alpha coefficient of Cronbach of 0.92 and a high test–retest reliability, as well as good discriminant, concurrent and construct validity. The total score of this scale was correlated with the total score of the Impact Event Scale (IES) by Horowitz and colleagues [86], showing a high correlation (0.77;  $p < 0.001$ ). In the present study, Cronbach's alpha coefficient for internal consistency was 0.94.

The Criterion A stressor was assessed by asking the subject whether she had experienced an unusual, extremely distressful event (irrespective of whether it was IPV- or not IPV-related). Either event was considered a qualifying trauma if it met the DSM-IV [41] criteria for PTSD. The distressing symptoms had to persist for at least 4 weeks. In the Echeburua's Severity of Symptom Scale, a subset of 17 items targets the PTSD symptom categories of 're-experiencing', 'avoidance' and 'hyperarousal'. Each item is a phrase or word delineating a PTSD symptom related to the trauma experience, which is accompanied by a 4-point Likert-type rating scale ranging from 0 (not at all) to 3 (five or more times a week). The 17 PTSD scale items were summed for each subject, resulting in a continuous score for PTSD symptom severity ranging from 0 to 51 in the global scale.

For a categorical diagnosis of PTSD, the respondent had to endorse at least one item of the PTSD subscale assessing re-experiencing of the trauma, three items indexing avoidance, and two items reflecting increased arousal. The sum of the total scores had to be more than 15 (cut-off point).

### 2.3. Statistical analyses

The two groups of women (non-abused and abused) were compared with respect to age, number of children and total score of posttraumatic stress disorder and its subscales using one-way analysis of variance (ANOVA).  $\chi^2$  test was used to assess the relationship between IPV and the following variables: educational level, employment, use of pharmacological, psychological and psychiatric treatment, cohabitation with the partner, and life history of victimization. Within the group of abused women, we used  $\chi^2$  test to evaluate associations between PTSD and the following variables: educational level, employment, use of pharmacological, psychological and psychiatric treatment, cohabitation with the partner, and physical, psychological and sexual IPV during the last year.

Principal components factor analysis with varimax oblique rotation was performed to obtain the underlying structure of the all violence measures observed (duration,

frequency and use of coercive instruments in childhood, adulthood and IPV). The criteria to determine the number of components was eigenvalues of greater than 1. The saturation for each item in every component was greater than 0.70. The emerged components were used as predictor variables of PTSD symptomatology.

Pearson's test was used to verify (i) correlations between pairs of violence forms and (ii) associations between the intensity of violence forms and continuous measures of PTSD symptoms. Hierarchical multiple regression analysis were conducted to investigate relationships among the current and prior abuse variables and PTSD symptomatology. The predictor variables were entered in three steps. Step 1: childhood abuse (physical/psychological and sexual); step 2: adulthood victimization (physical, psychological and sexual); step 3: intimate partner violence (physical, psychological and sexual). The dependent variable was the total score of PTSD.

## 3. Results

### 3.1. Sociodemographic profile

One hundred and twenty-seven women participated in this study. The mean age was 44.16 years old ( $SD = 11.73$ ), with a range of 20 to 76.

The sociodemographic profile of the two groups of women (non-abused and abused) is shown in Table 1. There were no significant differences between groups in age and number of children. Educational groups were collapsed into incomplete primary school or less, primary school, and secondary school or more, in order to avoid the problem of small cell size [87]. No significant differences between groups in educational level were found. We also collapsed employment categories into two groups, depending on whether they had or had not some official income. The results indicated there was no significant association between IPV and employment category (Table 1).

### 3.2. Control variables

Table 1 reports data on pharmacological, psychiatric and psychological treatment.  $\chi^2$  tests revealed that IPV and non-IPV women did not differ significantly in the use of antidepressants, anxiolytics and hypnotics at the time of the interview. On the contrary, the use of tranquilizers was significantly larger in physically abused women. In addition, abused women went for psychiatric and psychological treatment more than could be expected by chance (Table 1).

### 3.3. Violence perpetrated by the intimate male partner

All women exposed to physical violence (abused group) were also psychologically abused by their intimate male

Table 1  
Sociodemographic, control, victimization and posttraumatic stress disorder (PTSD) variables of abused ( $n=75$ ) and non-abused ( $n=52$ ) women

Variable	Non-abused Women	Abused-women	Statistics
Age (mean $\pm$ SD)	46.6 $\pm$ 12.4	42.5 $\pm$ 11	$F(1,126)=3.9$ ; n.s.
Education level (% of women)			$\chi^2(2, N=127)=5.4$ ; n.s.
Illiterate	0	1.3	
Able to read and write	1.9	9.3	
Incomplete primary school	15.4	25.3	
Primary school	38.5	32	
Secondary school	36.5	24	
University Studies: 3–4 years	3.8	2.7	
University Studies: 5–6 years	3.8	5.3	
Employment (% of women)			$\chi^2(2, N=127)=2.4$ ; n.s.
Self-employed	3.8	4	
Fixed-work	15.4	17.3	
Temporary-work	9.6	17.3	
Unemployed with payment	3.8	5.3	
Unemployed without payment	3.8	8	
Housewife	53.8	28	
Undeclared work	3.8	18.7	
Pensioner	3.8	1.3	
Others	1.9	0	
Number of children per woman (mean $\pm$ SD)	1.8 $\pm$ 1.1	2.1 $\pm$ 1.3	$F(1,126)=1.1$ ; n.s.
Pharmacological treatment (% of women)			
Antidepressants	13.5	21.3	$\chi^2(1, N=127)=1.3$ ; n.s.
Anxiolytics	11.5	24.0	$\chi^2(1, N=127)=3.1$ ; n.s.
Hypnotics	3.8	8.0	$\chi^2(1, N=127)=0.9$ ; n.s.
Tranquillizers	5.8	20.0	$\chi^2(1, N=127)=5.1$ ; $p<0.05$
Psychiatric treatment during the relationship (% of women)	13.5	33.3	$\chi^2(1, N=127)=6.43$ ; $p<0.05$
Psychological treatment during the relationship (% of women)	19.2	44.0	$\chi^2(1, N=127)=8.41$ ; $p<0.01$
Cohabitation with the partner at the time of the interview (% of women)	98.1	48	$\chi^2(1, N=127)=35.7$ ; $p<0.001$
Childhood abuse (% of women)			
Physical	26.9	49.3	$\chi^2(1, N=127)=6.4$ ; $p<0.01$
Psychological	27.5	44.4	$\chi^2(1, N=123)=3.7$ ; $p<0.05$
Sexual	13.5	40	$\chi^2(1, N=127)=10.5$ ; $p<0.001$
Adulthood violence by others than partners (% of women)			
Physical	11.5	28	$\chi^2(1, N=127)=5.0$ ; $p<0.05$
Psychological	25	43.8	$\chi^2(1, N=125)=4.7$ ; $p<0.05$
Sexual	13.5	33.3	$\chi^2(1, N=127)=6.4$ ; $p<0.01$
PTSD total score	2.1 $\pm$ 3.0	14.7 $\pm$ 12.1	$F(1,126)=53.2$ ; $p<0.001$
Reexperiencing	1.0 $\pm$ 1.4	5.0 $\pm$ 4.2	$F(1,126)=42.7$ ; $p<0.001$
Avoidance	0.7 $\pm$ 1.7	5.2 $\pm$ 5.1	$F(1,126)=38.3$ ; $p<0.001$
Arousal	0.4 $\pm$ 0.9	4.5 $\pm$ 3.9	$F(1,126)=52.8$ ; $p<0.001$
Incidence of PTSD (% of women)	0	28	$\chi^2(1, N=127)=17.4$ ; $p<0.001$

$\chi^2$  = Chi-Square two-tailed test.

partners. Furthermore, 32% of them were also sexually abused (Table 2).

During the last year, a high percentage of women were physically, psychologically and sexually abused by the batterer (89.3%, 97.3% and 18.1%, respectively). Even so, 48% of the abused women were still living with the male intimate partner at the time of the interviews (Table 2).

### 3.4. Lifetime history of victimization

**Childhood abuse.** As shown in Table 1, childhood physical, psychological and sexual abuse rates were significantly higher in abused women than non-abused women.

**Adulthood violence by other/s than partners.** Adulthood physical, psychological and sexual victimization rates were

Table 2

Sociodemographic, control, victimization and intimate partner violence (IPV) variables, in abused women ( $n=75$ ) with and without posttraumatic stress disorder

Variable	Proportion (%)	Presence PTSD (%)	No PTSD (%)	PTSD vs. No PTSD
Education level				$\chi^2(2, N=75)=1.8$ ; n.s.
Illiterate	1.3	0	100	
Able to read and write	9.3	0	100	
Incomplete primary school	25.3	36.8	63.2	
Primary school	32	29.2	70.8	
Secondary school	24	27.8	72.2	
University Studies: 3–4 years	2.7	0	100	
University Studies: 5–6 years	5.3	50	50	
Employment				$\chi^2(1, N=75)=1.6$ ; n.s.
Self-employed	4	66.7	33.3	
Fixed-work	17.3	23.1	76.9	
Temporary-work	17.3	38.5	61.5	
Unemployed with payment	5.3	25	75	
Unemployed without payment	8	16.7	83.3	
Housewife	28	23.8	76.2	
Undeclared work	18.7	21.4	78.6	
Pensioner	1.3	100	0	
Pharmacological treatment (% of women)				
Antidepressants	21.3	25	75	$\chi^2(1, N=75)=0.1$ ; n.s.
Anxiolytics	24.0	22.2	77.8	$\chi^2(1, N=75)=0.4$ ; n.s.
Hypnotics	8.0	33.3	66.7	$\chi^2(1, N=75)=0.9$ ; n.s.
Tranquillizers	20.0	33.3	66.7	$\chi^2(1, N=75)=0.3$ ; n.s.
Psychiatric treatment during the relationship	33.3	24.0	76.0	$\chi^2(1, N=75)=0.3$ ; n.s.
Psychological treatment during the relationship	44.0	27.3	72.7	$\chi^2(1, N=75)=0.1$ ; n.s.
Childhood abuse				
Physical	49.3	18.9	81.1	$\chi^2(1, N=75)=3.0$ ; n.s.
Psychological	44.4	15.6	84.4	$\chi^2(1, N=72)=4.2$ ; $p < 0.05$
Sexual	40	26.7	73.3	$\chi^2(1, N=75)=0.1$ ; n.s.
Adulthood violence by others than partners				
Physical	28	33.3	66.7	$\chi^2(1, N=75)=0.4$ ; n.s.
Psychological	43.8	34.4	65.6	$\chi^2(1, N=73)=1.4$ ; n.s.
Sexual	33.3	36	64	$\chi^2(1, N=75)=1.2$ ; n.s.
Concomitance of sexual abuse in IPV	32	37.5	62.5	$\chi^2(1, N=75)=1.6$ ; n.s.
Cohabitation with the partner at the time of interview	48	25	75	$\chi^2(1, N=75)=0.3$ ; n.s.
Physical Violence during the last year	89.3	26.9	73.1	$\chi^2(1, N=75)=0.4$ ; n.s.
Psychological Violence during the last year	97.3	28.8	71.2	$\chi^2(1, N=75)=0.8$ ; n.s.
Sexual Violence during the last year	18.1	46.2	53.8	$\chi^2(1, N=72)=2.2$ ; n.s.

$\chi^2$  two-tailed test.

significantly higher in abused women than non-abused women (Table 1).

### 3.5. Intercorrelations between the different forms of violence

The intensity of each violence experience was measured by quantifying frequency, duration, number of suffered acts,

and use of coercive instruments. Separated Pearson correlation analyses were performed between pairs of violence components, as emerged from principal components factor analysis. These components were: (1) childhood physical and psychological abuse, (2) childhood sexual abuse, (3) adult (nonpartner) psychological victimization, (4) physical IPV, (5) adult (nonpartner) physical

victimization, (6) adult (nonpartner) sexual victimization, (7) psychological IPV, and (8) sexual IPV. The only statistically significant association was between psychological and physical IPV ( $r=0.60, p<0.01$ ): women which were more intensely exposed to aggressive physical acts also suffered higher levels of psychological violence.

### 3.6. Posttraumatic stress disorder

#### 3.6.1. Symptomatology and incidence of PTSD

PTSD symptom scores ranged from 0 to 44 (mean = 9.55, S.D. = 11.35), with 77.2% reporting at least one PTSD symptom across the entire sample ( $N=127$ ). There were significant differences between groups (Table 1) in the scores of post-traumatic stress disorder and all three subscales of PTSD symptomatology (re-experiencing, avoidance, and arousal). The groups differed also in the incidence of PTSD: physically abused women had a higher incidence of PTSD (28%) than non-abused women (0%).

#### 3.6.2. Association between the incidence of Posttraumatic Stress Disorder and sociodemographic/control/victimization variables in abused women

There were no age differences [ $F(1,74)=0.24; p=0.63$ ] between women that fit criteria for PTSD and those who did not. When considering all abused women, there was no significant correlation between age and PTSD score ( $r=-0.21, p=0.08$ ).

Educational level and employment were not associated with the incidence of PTSD (Table 2). In both cases the categories were collapsed as explained in the previous section.  $\chi^2$  tests did not reveal any significant association between the use of psychopharmacological, psychiatric and psychological treatment and the incidence of posttraumatic stress disorder (Table 2).

Current IPV related variables, such as cohabitation with the intimate partner, concomitance of intimate partner sexual violence, and recent physical, psychological and sexual IPV were not associated with the incidence of PTSD. The incidence of PTSD was not significantly higher in women who suffered adulthood victimization as compared to those who did not. Surprisingly, the analysis revealed that most of the women who had had experiences of physical, psychological and sexual childhood abuse did not meet the diagnostic criteria for PTSD (Table 2).

#### 3.6.3. Correlations between all violence experiences and PTSD score in abused women

The intensity of each violence experience was measured by quantifying the frequency, duration, number of suffered acts, and use of coercive instruments. Within the group of abused women, Pearson's correlations were performed between PTSD score and violence components, as emerged from principal components factor analysis. These components were: (1) childhood physical and psychological abuse; (2) childhood sexual abuse; (3) adult (nonpartner)

psychological victimization; (4) physical IPV; (5) adult (nonpartner) physical victimization; (6) adult (nonpartner) sexual victimization; (7) psychological IPV; and (8) sexual IPV.

There was a positive association between PTSD score and adulthood psychological victimization ( $r=0.37, p<0.01$ ). There was a negative association between PTSD and childhood physical/psychological abuse ( $r=-0.28, p<0.05$ ). None of the other measures of violence were significantly associated with the total PTSD score.

#### 3.6.4. Testing the prediction of victimization and IPV variables on PTSD symptomatology

Hierarchical regression analysis revealed that the main predictor arising PTSD symptomatology was intimate partner violence ( $F(3,82)=14.68; R^2=0.31; p<0.001$ ) (Table 3). Childhood abuse variables (step 1) were not significant predictors of PTSD score variance. Overall adulthood victimization by other/s than the partner (step 2) did not increase significantly the amount of explained variance of PTSD symptomatology ( $\Delta R^2=0.08, F(3,85)=2.66, R^2=0.11; n.s.$ ). However, adulthood psychological violence by other/s than the partner had an independent, significant effect on PTSD variance ( $\beta=0.24, p<0.01$ ). After controlling for the effect of childhood abuse and adulthood victimization experiences perpetrated by other/s than the partner, the block of variables related to intimate partner violence (step 3) turned out to be the strongest predictor of PTSD symptomatology. Although each form of IPV had a significant impact, the psychological component was the main contributor for the development of PTSD (physical:  $\beta=0.27, p<0.05$ ; sexual:  $\beta=0.23, p<0.05$ ; psychological:  $\beta=0.29, p<0.01$ ). Tolerance and VIF (variance inflation factor) values did not show colinear variables.

## 4. Discussion

The present study was aimed at addressing the contribution of lifetime violent experiences on the development of PTSD symptomatology in women, with particular emphasis on the role of intimate partner violence. In addition, we wanted to assess whether the likelihood of being victim of intimate partner violence was related to child and adult (nonpartner) victimization experiences. Importantly, within each experience of violence (childhood abuse, adult victimization by other/s than the partner and intimate partner violence) the role of physical, psychological and sexual components were separately analysed. Moreover, PTSD and each violence experience were not merely assessed with a 'yes' or 'no' criterion (presence or absence) but individually quantified as a numerical score.

Before discussing the results, it is worth mentioning that the present research is not free from limitations. Our sample of abused women consisted of people seeking help from



Table 3  
Summary of hierarchical regression analysis for variables predicting symptoms of posttraumatic stress disorder in abused and non abused women ( $n=127$ )

Step and predictors	Total $R^2$	$R^2$ change	$F$ change	$\beta$	$t$
<i>Step 1</i>					
Block of Childhood abuse	0.02	0.02	1.02		
Physical/Psychological				-0.13	-1.56
Sexual				0.05	0.61
<i>Step 2</i>					
Block of Adulthood violence by others than partners	0.11	0.08	2.66		
Physical				-0.02	-0.22
Psychological				0.24**	2.83**
Sexual				-0.12	-1.41
<i>Step 3</i>					
Block of Intimate partner violence	0.42	0.31	14.68***		
Physical				0.27*	2.45*
Psychological				0.29**	2.63**
Sexual				0.23*	2.62*

$\beta$  = Standardised regression coefficient; For all multiple hierarchical regression analyses, the  $\alpha$ -level was set at 0.05; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

domestic violence agencies. This sampling strategy, though good for preliminary analysis of a high-risk group of battered women, is limited in view of generalization. Moreover, we collected retrospective data whose accuracy is questionable by definition. In addition, women shame, blame or fear can lessen the reliability of violence reports, particularly concerning episodes of sexual abuse [97]. Finally, a better discrimination among the effects of different types of IPV on PTSD could have been achieved by considering an additional group, i.e. women who were exposed only to psychological IPV.

This study suggests that the main predictor for current posttraumatic stress disorder was intimate partner violence. In other words, women suffering from IPV had a significantly higher rate of PTSD as compared to control women. One may argue that IPV turned out to play a major role in current PTSD symptomatology because of its closer temporal proximity with PTSD assessment as compared to the other violence experiences. Indeed, we cannot exclude this possibility. The tight temporal association between IPV and PTSD assessment was inherent in the way in which IPV women were recruited, i.e. when they sought for help in outpatient counselling agencies as victims of IPV. However, it is important to note that IPV was not the only Criterion A stressor for the assessment of PTSD. In fact, we made sure that Criterion A stressor met the DSM-IV criteria for PTSD, irrespective of its relation with IPV. Nonetheless, it is a matter of fact that 80.1% of abused women reported that their PTSD symptomatology was IPV-related.

Generally speaking, this result is in agreement with previous studies, showing that women who had been victims of IPV are at increased risk for developing PTSD symptomatology [1,2,21,43]. The particular addition from

this study is the influence of each type of IPV. When the role of psychological, physical and sexual aspects of intimate partner violence were considered separately, the psychological component turned out to be the strongest predictor, followed by sexual and physical.

One important variable to be taken into account when examining the effects of IPV on current PTSD symptomatology is whether the woman was still living with the violent partner at the time of the interview. It is reasonable to suppose that this would be a more stressful situation. In this sample, 48% of abused women were still living with the male intimate partner at the time of the interview, whereas 52% of abused women had left the batterer during the last 12 months or previously. Interestingly, there was no significant association between being separated from the partner and the presence of PTSD symptoms. However, there is also evidence that abused women may be still subject to severe abuse even after they leave a violent relationship. Since leaving the batterer does not automatically eliminate actual exposure to his violence, it is good practice to verify whether the woman is still exposed to IPV even after she has left him.

It does not have to be underestimated that the effect of IPV can persist long time after the women had stopped the violent relationship [2]. A high percentage of the women in this sample had been physically, psychologically and sexually abused by the batterer during the last year (89.3, 97.3 and 18.1%, respectively). Although recent abuse did not seem to affect the incidence of PTSD in this study, the prevalence of posttraumatic stress disorder in abused women (28%) was much higher than in non-abused women. While this rate is lower compared with previous studies, the proportion is much higher than the rate for the general

population (4.6%) [88]. Indeed, the assessment of current PTSD symptoms during interviews was performed after the collection of demographic and violence information. This could have determined an inflation of PTSD symptoms due to situational distress secondary to discussing traumatic events related to IPV. A possible explanation for the rate disparity between ours and other studies is the use of different methods for measuring PTSD [15,45]. Moreover, it might well be that other studies found higher rates because shelter samples were studied, where the expected prevalence of PTSD is higher.

In the present study, all women reporting IPV were physically and psychologically abused and a remarkable proportion of them (32%) was also sexually abused by the intimate partner. Yet our data indicated no relationship between sexual violence by the partner and the incidence of PTSD. However, this result has to be interpreted with caution, as via Chi-square analysis we only took into account the presence or absence of IP sexual abuse, without considering its intensity. In fact, the hierarchical regression analysis showed that the intensity of sexual violence experienced was a strong predictor of PTSD symptomatology. This finding underlines the advisability of considering not just the presence/absence of a given violent experience, but also its intensity.

The only significant association among the different forms of violence was between physical and psychological intimate partner violence. This finding is consistent with the results of previous studies, which indicated that physical IPV was usually accompanied by psychological abuse [46–48,89,98]. This implies that the effects of psychological abuse are tightly intertwined with the effects of physical and sexual violence [90], thus requiring careful separation of the different components of intimate partner violence.

The degree of psychological abuse appears to be a stronger predictor of fear within violent relationships than the severity of physical abuse [31]. Fear of possible further episodes of physical, psychological and sexual abuse represents a chronic emotional stressor that can persist for a long time [2,14]. Therefore, we suggest that this emotional state is a relevant component of psychological abuse impacting woman psychological functioning.

In respect to childhood abuse experiences, abused women reported more childhood physical, psychological and sexual abuse experiences than non abused counterparts, in agreement with other studies focussing on these variables [77,81,91]. The available literature is inconsistent concerning the relationship between childhood abuse and risk for developing posttraumatic stress disorder. Some studies suggest that there is a positive correlation [82,92,93], whereas others indicate that there is no clear relationship [77,83]. Surprisingly, we found that women with PTSD reported less childhood abuse experiences (measured as presence or absence) than those without PTSD, although only childhood psychological abuse was relevant at

a statistical level. However, the results of the hierarchical regression analysis (that took into account the intensity of childhood abuse) suggested that childhood abuse variables did not explain PTSD score variance. Equally surprising was the negative correlation between the intensity of childhood physical/psychological abuse and the intensity of PTSD symptomatology. However, in our study childhood abuse was far more frequent in women which subsequently experienced IPV. This allows us to speculate that, more than childhood negative experiences themselves, it is the association between childhood abuse and adult IPV that determines the higher risk for PTSD [94]. It also needs to be taken into account that the negative effects of childhood abuse are extremely variable among individuals and can be mitigated by a number of factors including the victim's subjective perception of the events and the available social support [75].

The interaction between adulthood victimization by other/s than the partner and intimate partner violence has been sparsely investigated to date. The empirical evidence supports the idea that sexual and physical victimization perpetrated by other/s than the partner increases the likelihood of development of posttraumatic stress disorder symptoms [95–96]. However, it is clear that adult physical or sexual assault, IPV and PTSD interact in a very complex, multifactorial manner. In this study, women who experienced IPV reported more adulthood victimization by other/s than the partner than the group of non abused women. At the same time, the correlational analysis revealed a positive association between the psychological component of adulthood victimization and PTSD score. The results of hierarchical regression analysis indicated that psychological adulthood victimization was an independent contributor to PTSD symptomatology. Altogether, this set of empirical evidences suggests that women involved in an abusive relationship were more frequently exposed to other experiences of adulthood victimization and were more prone to suffer posttraumatic stress disorder symptoms, perhaps as a result of this cumulative trauma.

In summary, these findings underline the importance of separating the effects of the different types of intimate partner abuse when taking into account its effects on women mental health. Indeed, each component of intimate partner violence (physical, psychological and sexual) had an independent, significant effect on the development of PTSD symptomatology. In particular, the psychological component of intimate partner violence appeared to be the strongest predictor of posttraumatic stress disorder.

## Acknowledgements

The author is grateful to Dr Enrique Echeburua and Dr Jacquelyn Campbell for their precious suggestions during the preparation of the manuscript. Special thanks are given

to Dr Vicente Gonzalez-Roma for statistical help. Thanks are also due to the Conselleria of Social Welfare and the 24-h Centers for Helping Women of the Valencian Community of Spain for their assistance in contacting the battered women.

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