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Maternal experiences of childhood abuse and intimate partner violence: Psychopathology and functional impairment in clinical children and adolescents☆

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ABSTRACT

Objectives: The current study examined the independent effects of mothers' childhood abuse (CA) and intimate partner violence (IPV) on psychopathology and functional impairment in children; and the potential moderating and mediating role of individual and family factors in these relationships. Additionally, this study explored the potential cumulative effects of both maternal CA and IPV on children's outcomes.
Method: The sample included 547 Spanish children and adolescents aged between 8 and 17 years, and their parents, who had accessed mental health services. The assessment was based on structured interviews with the children and their parents. Statistical analyses were carried out through hierarchical multiple, negative-binomial and logistic regressions, and Structural Equation Models.
Results: Children whose mothers experienced CA and those whose mothers suffered physical IPV showed increased DSM-IV disruptive disorders and externalizing behavior problems, respectively. Children who directly observed physical IPV and also suffered physical punishment by parents showed increased internalizing problems. IPV had effects, either direct or indirect by physical punishment, on children's externalizing problems. Cumulative effect analyses indicated that the prevalence of disruptive disorders was highest in children whose mothers had suffered both CA and IPV.
Conclusion: Spanish children whose mothers have suffered CA, IPV or both, are at high risk of serious conduct problems, whereas children exposed to IPV and who were also physically abused are at greater risk of internalizing problems. Physical punishment of children contributes in part to explain externalizing problems of IPV-exposed children. These findings indicate potential targets of assessment and intervention for families seeking help in mental health services.

Childhood abuse experienced by mothers (CA) and intimate partner violence (IPV) have been significantly linked to poorer outcomes in children (Collishaw, Dunn, O'Connor, & Golding, 2007; Holt, Buckley, & Whelan, 2008). Most research has separately examined children whose mothers suffered CA or IPV (Kitzmann, Gaylord, Holt, & Kenny, 2003; Roberts, O'Connor, Dunn, & Golding, 2004; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003). Examining the independent effects

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of CA and IPV can offer a detailed report on the possible risk to children's psychopathology. In this field, there has been growing interest in examining the impact of maternal lifetime violence on the mental health problems in children (Koverola et al., 2005; Morrel, Dubowitz, Kerr, & Black, 2003), with recent research suggesting that cumulative maternal violence experiences can adversely affect psychological outcomes in children (Dubowitz et al., 2001).

In Spain, the first epidemiological study on childhood abuse (CA), conducted in 1988, reported a high prevalence, with 4 per thousand of the population under 16 years being victims of maltreatment (Inglés, 1991). Current data on the prevalence of child sexual abuse in Spanish university students indicate that a 19% of women reported such an experience, suggesting that this is a widespread problem in Spanish society (Pereda & Forns, 2007). Likewise, IPV, defined as violence that occurs in couples, is now a serious social and health problem, reaching a prevalence of 3.19 per thousand women, with an increased incidence of 153.7% between the years 2000 and 2004 (Queen Sofia Center, 2007). According to the report from United Nations Secretary in Spain each year around 188,000 children are exposed to IPV (UNICEF, 2006). However, published data could not be found on the link between the experiences of violence during the lifetime of the mothers and the psychological outcomes in Spanish children.

Research indicates that mothers' CA is associated with adverse effects in their children, including high levels of hyperactivity, emotional and behavioral problems, difficulties in relationships with peers (Roberts et al., 2004), adjustment problems and poor prognosis in mental health (Collishaw et al., 2007). On the other hand, IPV is related to internalizing and externalizing problems, symptoms of trauma, and a wide range of cognitive, social and emotional difficulties in children (Evans, Davies, & Dilillo, 2008; Kitzmann et al., 2003; Wolfe et al., 2003). In adolescence, offspring of mothers who have suffered IPV are at greater risk of anxiety and conduct disorders, alcohol problems, criminality (Fergursson & Horwood, 1998), depressive disorders and physical aggression against peers and parents (McCloskey & Lichter, 2003).

Developmental psychopathology provides an integrated theoretical framework to understand how mothers' CA and IPV could affect the child's psychological functioning. From this perspective, adaptive or maladaptive development results from a complex interplay of individual variables, the developmental stage and external environmental factors (Cicchetti, 1993; Rutter & Sroufe, 2000). A child who has suffered abuse usually fails to achieve development-tasks successfully (Cicchetti & Lynch, 1995). In this way, mothers who have suffered CA may show psychological impairment and parenting problems, which in turn negatively affect their children's functioning (Collishaw et al., 2007; Roberts et al., 2004). Likewise, children who live in violent households growing up in an environment that fails in providing the necessary conditions for normal development (Cicchetti & Lynch, 1995). Therefore, violence between family members, such as mothers' experiences of IPV, may lead to efforts by the children to accommodate to these situations which are often characterized by intense emotions (Wolfe et al., 2003).

Studies have shown that the effects of violent experiences vary depending on the individual factors related to the child. The child's sex and age are recognized as important variables in interpreting the effects of family violence (Wolfe et al., 2003). However, literature shows discrepancies about the potential moderating role of these variables. Two meta-analyses (Kitzmann et al., 2003; Wolfe et al., 2003) and research by Sternberg, Baradaran, Abbot, Lamb, and Guterman, (2006) found no significant differences for girls and boys exposed to IPV, whereas Evans et al. (2008) reported that the link between IPV and externalizing symptoms was significantly stronger for boys. The age of the child was found to contribute to the effects of IPV in research by Sternberg et al. (2006), while three meta-analyses (Evans et al., 2008; Kitzmann et al., 2003; Wolfe et al., 2003) found that the child's age was not a significant moderator.

Family factors such as child physical punishment may also influence the psychological problems of children whose mothers suffered violence. Nevertheless, there is inconclusive evidence on the potential moderating or mediating role of these factors. Mothers with CA experiences may be more likely to display harsh physical discipline (DiLillo & Damashek, 2003) or abusive parenting (Cicchetti & Lynch, 1995). Physical punishment of children is frequent in families experiencing IPV (McCloskey, Figueredo, & Koss, 1995; Osofsky, 2003) and studies have reported high rates of co-occurrence between IPV and child physical abuse ranging from 45 to 70% (Holt et al., 2008). Exploring child abuse as a moderator of IPV, Wolfe et al. (2003) reported preliminary evidence that the children who were both IPV-exposed and direct targets of abuse showed a worse functioning, compared with those who were only IPV-exposed. Sternberg et al. (2006) found a greater risk of internalizing problems when children had been physically abused, in addition to being exposed to IPV. Besides, a recent study found a significant interaction between these two forms of violence, showing increased psychological symptoms in abused children who are exposed to higher levels of IPV (Kaslow & Thompson, 2008). However, Kitzmann et al. (2003) reported no significant differences between children in IPV-contexts who suffered physical abuse and those who did not. On the other hand, child abuse has been suggested as a mediator, that is, one of the mechanisms through which IPV could affect children (Jouriles, Barling, & O'Leary, 1987; Levendosky & Graham-Bermann, 2001). Literature provides support that IPV would lead to child abuse, which in turn would lead to psychopathological problems in children (Salzinger et al., 2002). Similarly, parental hostility has found to be a pathway that could explain the adjustment problems in offspring of mothers that suffered abuse in childhood (Collishaw et al., 2007).

Research has indicated that mothers with a history of violence show increased mental health problems (Koverola et al., 2005; Morrel et al., 2003). Poor maternal mental health was found to play a significant moderating role in the relation between IPV and psychological outcomes of adolescents (Levendosky, Huth-Bocks, & Semel, 2002). Adolescents in IPV contexts were more likely to exhibit depression and trauma symptoms, when their mothers were suffering such symptoms (Levendosky et al., 2002). A previous study of IPV-exposed children also reported findings in this line (Levendosky & Graham-Bermann, 2000). On the other hand, studies examining the potential mediating role of mothers' mental health have indicated that

maternal depressive symptoms significantly mediated the effect of mothers' violence history on their children's psychological problems (Koverola et al., 2005; Morrel et al., 2003); as well as affective and anxiety symptoms of mothers were the pathways by which maternal CA experiences negatively affected their children's well-being (Collishaw et al., 2007; Roberts et al., 2004). In contrast, studies have reported that, although mothers involved in IPV had an elevated psychopathology it was unrelated to their children's problems and did not act as a mediator (McCloskey et al., 1995). Other researchers that have examined mothers' and fathers' mental health problems reported that IPV was associated with parental alcoholism and criminality (Fergursson & Horwood, 1998) and fathers involved in IPV were more likely to show psychopathology problems (Eckhardt, Samper, & Murphy, 2008). However, there are scarce studies exploring the moderating or mediator role of the fathers' mental health.

Some recent studies that have examined mothers' lifetime exposure to violence (in childhood or adulthood) suggest that the mothers who have suffered any such exposure report more behavioral, emotional, and social problems in their children, compared with other mothers not exposed (Koverola et al., 2005; Morrel et al., 2003). Nevertheless, few researchers have explored the potential cumulative effect of mothers' experiences of violence on children's outcomes. Dubowitz et al. (2001) found that the mothers, who have suffered violence both as an adult and as a child, reported a greater degree of psychological problems in their children than those who have not suffered at all or who have only suffered in one period of their life. According to the cumulative risk model (Rutter, 1979), which proposes that the prevalence of clinical problems increases as the number of risk factors increases, Dubowitz et al. (2001) suggest that greater exposure to violence in the mothers is associated with worse psychological outcomes in children.

Researchers in health services have found that the mothers' experiences of violence are a common problem (Dubowitz et al., 2001; Morrel et al., 2003). McDonald, Jouriles, Norwood, Shinn, and Ezell (2000), in a study with families seeking clinical services for their children's behavioral difficulties, found that IPV occurred in 48% of families. This research highlights the relevance of extending studies in clinical populations and promoting the identification of factors that may influence differentially on children's clinical problems. In this regard, and on the basis that a particular event may result in different difficulties (Cicchetti, 1993), research in clinical samples also provides an opportunity to examine the link between maternal violence experiences and a wide range of child's psychopathological problems, including externalizing and internalizing behavior, as well as different DSM-IV diagnostic categories.

Considering the significant prevalence of experiences of violence in Spanish women and the increased risk of harmful consequences for their offspring, this study aims to examine, in a large sample of Spanish outpatient children and adolescents: (1) the independent effects of mothers' CA and IPV on psychopathology and functional impairment, and the potential moderating and mediating role of individual and family factors; (2) the potential cumulative effect of both mothers' CA and IPV on the psychopathology and functioning of their children. It was hypothesized that (1) mothers' CA and IPV would be positively associated with psychopathological problems and impairment in children; (2) family factors (parental psychopathology, physical punishment of children) would increase the effects of maternal CA and IPV on children's psychopathological problems; (3) maternal CA and IPV would be associated with children's psychopathological problems through family factors (parental psychopathology, physical punishment of children). Because of the inconclusive evidence about the moderating role of children's sex and age, no hypotheses was proposed for these analyses; (4) the mothers' exposure to violence in two periods of life (both CA and IPV) would be related to worse outcomes in children, compared with maternal exposure in just one period or no exposure at all.

Method

Participants

The sample included 547 children and adolescents, between 8 and 17 years of age, and their parents, who were recruited from psychiatric outpatient settings of the public health network in the metropolitan area of Barcelona (Spain). Families from 27 municipalities of this geographic area were included, representing populations living in north-eastern Spain. Subjects were referred by their general practitioner, regardless of socioeconomic status. All the participants were included in this study after coming into contact with mental health centers. The children visited the centers for the first time and were interviewed as part of their diagnostic process, but did not receive treatment at the time of the study.

The individuals who had mental retardation or pervasive developmental disorders were excluded from the study ($n = 5$). Thirty individuals refused to participate in this study, there were no differences in age and socio-economic status among those who participated in the study and those who rejected it. Nevertheless, there was a significantly higher percentage of girls among those who refused to participate ($p = .031$).

Measures

The Schedule of Risk Factors (SRF; UED, 1997) is a structured interview based on the Service Utilization and Risk Factors interview (Goodman et al., 1998). Inter-interviewer reliability and concurrent validity are acceptable in Spanish populations (Guillamón, 1999). It comprises a comprehensive compendium of factors and situations that may affect mental disorders in children and adolescents. There are versions for parents and children. In this study the following sections, which provide categorical data, were used: (1) information from mothers about their CA (psychological, physical and/or sexual); (2)

information from children about the presence of IPV through the *Child's Perception of Interparental Conflict Scale*, which has demonstrated adequate levels of internal consistency (alpha values above .70) and test–retest reliability (correlations above .68) (Grych, Seid, & Fincham, 1992); (3) information from children and parents about the occurrence of child physical punishment, measured through *Parental Discipline Practices Scales* (Goodman et al., 1998), which has showed acceptable internal consistency in previous psychometric studies (alpha value around .70). Physical punishment was defined present if either the parents or the child reported a positive answer on some of the two items: "spank or slap (you/her/him)" and "hit (you/her/him) with a belt or other object." Also, the presence of mental disorders in parents was assessed through the *Family Psychiatric History Screen for Epidemiologic Studies* (Lish, Weissman, Adams, Hoven, & Bird, 1995). Mothers and fathers are rated with a value if they presented problems related to the 15 DSM-IV diagnoses included in this screening (mood disorders, anxiety disorders, substances, psychosis and disruptive disorders). Based on the answers, each parent is then classified as positive (value 1) or negative (value 0) for each diagnostic category. From this binary information a quantitative variable was created, which is the count of the number of disorders reported by each parent. For adult informants reporting on themselves, specificity was very good (average .84%) and sensitivity was moderate (average .64%) (Lish et al., 1995).

Diagnostic Interview for Children and Adolescents-IV (DICA-IV; Reich, Leacock, & Shanfeld, 1997). This is a semi-structured diagnostic interview that assesses the presence of the most frequent psychological problems in children and adolescents, according to diagnostic categories of DSM-IV (American Psychiatric Association, 1994). There are 3 versions: for children (8–12 years), adolescents (13–17 years) and their parents. The DICA has been adapted and validated for Spanish populations with satisfactory psychometric properties. The agreement between interviewers ranged from good to excellent (kappa values from .65 to 1) (de la Osa, Ezpeleta, Domènech, Navarro, & Losilla, 1996; Ezpeleta, de la Osa, Júdez, et al., 1997) and the test–retest reliability was good (kappa values from .41 to 1) (Ezpeleta, de la Osa, Domènech, Navarro, & Losilla, 1997). The diagnoses were generated by combining information from parents and children at symptom level, that is to say, the symptom was present if either the parent or the child reported it. The DICA was used as a categorical measure of psychopathology in children and adolescents.

Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) is an inventory informed by parents that covers a variety of behavioral and emotional problems in children and adolescents between 6 and 18 years. It has 113 items with 3 response options (0-never; 1-sometimes; and 2-always). The CBCL has adapted for Spanish populations with satisfactory psychometric properties. Factorial studies confirmed the internal structure of the instrument and reliability and accuracy were excellent for the empirical scales (Cronbach's alpha values above .8) (Sardinero, Pedreira, & Muñiz, 1997). The CBCL was used as a dimensional measure (continuous data) of psychopathology in children and adolescents.

Child and Adolescent Functioning Assessment Scale (CAFAS; Hodges, 1997) is a dimensional measure of the level of functional impairment in children and adolescents. It contains the following 8 psychosocial areas: school, home, community, behavior toward others, mood/emotion, self-harmful behavior, substance use and thinking. Each scale is scored in 4 levels of impairment (0-no impairment; 10-mild; 20-moderate; and 30-severe). A total score is also generated as a lineal combination of the direct scores in the 8 sub-scales. In this study, the higher (worse) of the 2 scores resulting from the information from parents or children was used. The psychometric properties of this instrument have been studied in Spanish populations with satisfactory results: the agreement between interviewers ranged from good to very good (kappa values from .79 to .94), except for behavior toward others (.45) and for substance use (.64) (Ezpeleta, Granero, de la Osa, Domènech, & Bonillo, 2006). In this study the total scores (continuous data) were used as a measure of global functional impairment in children.

Procedure

The study had the approval of the Ethics Committee of the Universitat Autònoma of Barcelona. Informed written consent from parents and oral assent from children and adolescents to participate in the study was obtained. Afterwards, the DICA-IV and SRF were administered. Different interviewers (PhD students and psychologists) previously trained in the use of all the assessment instruments, interviewed separately and simultaneously parents and their children. After completing the interview, the interviewers rated the CAFAS. This assessment was later incorporated into the study and was administered to 515 children, who did not differ significantly in demographic features from the total sample. The CBCL was given to the parents to be returned at a later time but it was administered verbally if they had reading difficulties. It was returned by 339 parents (62%), whose children did not differ significantly in sex, age, and socioeconomic status from those who did not return it. Once the full assessment was completed, the researchers gave a detailed report on the results of the evaluation to the clinicians of the centers concerned. All significant recorded indication of risk was properly informed to the centers' staff. The Spanish public health system has support services for battered women, but as this was not the reason for the clinical consultation, information regarding the specific treatment services that is provided to caregivers was not made available to the researchers.

Statistical analysis

Data were analyzed with SPSS 15.0.1 for Windows and EQS6.1. The comparisons of demographic data between the groups studied were based on Chi-square procedures for categorical variables (the exact method using the Monte-Carlo estimation was used in the case of frequencies expected to be lower than 5) and ANOVA for quantitative.

Table 1
Sociodemographic characteristics of the sample.

	Total ($N = 547$)	Maternal exposure to violence				p
		S0 ($N = 422$)	S1 ($n = 49$)	S2 ($n = 58$)	S3 ($n = 18$)	
Sex						
Girls (%)	46.3	45.3	61.2	34.5	66.7	.013*
Boys (%)	53.7	54.7	38.8	65.5	33.3	
Age. Mean (SD)	13.3 (2.3)	13.3 (2.3)	13.2 (2.4)	13.2 (2.5)	13.7 (2.1)	.859
Mother's age. Mean (SD)	40.6 (5.5)	40.8 (5.4)	40.1 (5.5)	39.2(5.6)	41.8 (7.6)	.154
Father's age. Mean (SD)	43.2 (5.8)	43.5 (5.8)	42.6 (5.6)	41.8(6.1)	43.8 (7.5)	.280
SES[a] (%)						
Upper/Middle Upper	14.2	14.2	10.6	15.8	17.6	.983
Middle/Lower Middle	60.8	61.0	63.8	59.6	52.9	
Lower	25.0	24.8	25.5	24.6	29.4	

S0: No exposure to experiences of violence.
S1: Only childhood abuse.
S2: Only IPV in adulthood.
S3: Both childhood abuse and IPV in adulthood.
* $p < .05$.
[a] SES: Socioeconomic status (Hollingshead, 1975). SD = standard deviation.

Bivariate correlations valued the degree of association between the study variables. Hierarchical regression analyses were used to measure the independent effects of CA and IPV on children's psychopathology and functional impairment, while controlling for the covariates. The set of covariates were entered into the models in the first-step: child's sex and age, mother's and father's psychopathology and physical punishment against children. Because comorbidity is a common problem in child psychopathology, the models related to specific DSM-IV diagnostic categories also included the presence of other different comorbidity as covariate. In the second step, the two main variables were added into the models: maternal CA and IPV. In the third step, the interaction terms between mothers' violent experiences (CA, IPV) and potential moderating variables (individual and family factors) were entered in the models to explore whether the proposed factors modified the effects of maternal CA and IPV on children's outcomes. The moderation was considered present when interaction terms between mothers' experiences of violence and hypothesized moderating variables achieved p-values < 05. If interaction terms were significant, they were kept in the final model and the effects of maternal experiences of violence were estimated separately for different levels of moderating variable. Binary outcomes (DSM-IV disorders) were analyzed using logistic regressions and quantitative responses (CBCL, CAFAS) using multiple regressions. Count data were analyzed with negative binomial regression, this technique is the equivalent to Poisson-regression but it controls the over-dispersion problem of recounts (Hilbe, 2007). Predictive accuracy was evaluated by the change (increases) in R^2.

Structural Equation Models (SEM) were used to test the potential mediating role of parents' mental health and physical punishment of children in the link between maternal history of violence (CA, IPV) and children's psychopathological problems (CBCL). A series of regression equations were used in order to test these mediational models for the binary outcome variables (DSM-IV disorders). All the mediation analyses included children's sex and age as covariates. Following the conditions and procedures outlined by Baron and Kenny (1986), the mediation was supported when four criteria were satisfied: (1) maternal CA or IPV (predictor) was significantly related to parents' mental health or physical punishment of children (hypothesized mediator); (2) maternal CA or IPV (predictor) was significantly related to children's psychopathology problems (outcome); (3) parents' mental health or physical punishment (hypothesized mediator) was significantly related to the children's psychopathology problems (outcome); (4) maternal CA or IPV (predictor) reduced its effect or had no effect on children's psychopathological problems (outcome), when the parents' mental health or physical punishment (hypothesized mediator) was included in the mediational models. The goodness-of-fit of final SEM was valued through the usual indexes: Chi-square test (χ^2), Comparative Fit Index (CFI) and the Root Mean Squared Error of Approximation (RMSEA). It was considered a good fit if: the Chi-square achieved a p value above .05, the CFI coefficient was higher than .90, and the RMSEA was lower than .08 (Byrne, 2001). The method of Kenny, Kashy, and Bolger (1998) was used to test the mediator's significance.

Next, the contribution of lifetime maternal violence experiences was evaluated (not general exposure to violence; CA only, IPV only, and both) in terms of the effect on the child's psychopathology and functioning. Considering that these experiences could be seen as an ordered scale, trend analyses were used. Polynomial contrasts were obtained through regression models to explore the linear and quadratic trends into the relationship between life-time maternal experience of violence and children's psychopathological problems and functioning. The set of covariates were also included.

Results

Demographic characteristics of the participants are shown in Table 1. Participants were classified into the 4 groups according to life-time maternal violence experiences, based on the mothers' and children's reports to the *Schedule for Risk Factors* (SRF). Of the 547 mothers participating in this study, it was reported that 77% ($n = 422$) were not exposed to any experience of violence, 8.96% ($n = 49$) had suffered CA only, 10.6% ($n = 58$) IPV only and 3.29% ($n = 18$) had both experiences.

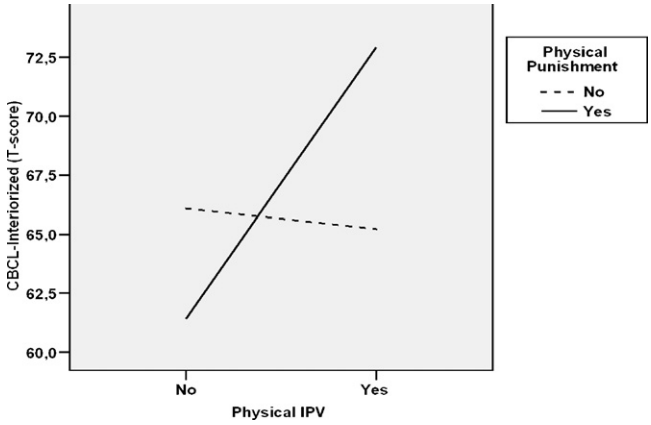

Fig. 1. Interaction effect of physical punishment against children and physical IPV for internalizing behavior problems.

Considering the associations between some socio-demographic features and the incomes and outcomes of this study we assessed the comparability of subsamples. It was found that the subsamples were homogeneous in age of the children, mothers and fathers. Likewise, there were no differences in socioeconomic status. As shown in Table 1, the only statistical difference between groups was for the child's sex: there were a higher percentage of boys in the groups not exposed to experience of violence (S0) and only exposed to IPV in adulthood (S2) ($p = .013$).

Table 2 presents bivariate correlations between the variables of the study. Maternal CA showed positive and significant associations with children's eating disorders, CBCL externalizing behavior problems and numbers of DSM-IV disorders. IPV was significantly correlated with CBCL externalizing behaviors problems and total score, global functional impairment (CAFAS total score) and DSM-IV total number of symptoms. Mother's psychopathology achieved significant correlations with all dependent variables, with the exception of presence of DSM-IV disorder and disruptive disorders. Father's psychopathology was significantly correlated with elimination disorders only. Physical punishment of children was positively correlated with DSM-IV disruptive disorders, CBCL externalizing behavior problems and total score, CAFAS global functional impairment and DSM-IV total number of symptoms.

Table 3 presents the results of the hierarchical models. Regression coefficients show the independent effects of CA and IPV on their children's psychopathology and functional impairment, as well as the covariates. The first-step of the model showed that the child's sex and age, mother's psychopathology, other comorbidities and physical punishment against children were associated with certain psychopathological problems and functional impairment in children and adolescents. This relationship was not found for fathers' psychopathology.

The mothers' CA was significantly associated only with an increase in the odds of DSM-IV disruptive behavior disorders of children and adolescents. On the other hand, IPV was related to a significant increase in the mean score of the CBCL externalizing behavior scale. Changes in R^2 between the first and the second step were low (over 2.5%), indicating that maternal CA and IPV did not clinically increase the predictive accuracy on the child's psychopathology and functioning, while controlling for individual, clinical and socio-familiar covariates.

The third step of the model indicated that the association of IPV with CBCL internalizing behavior problems was moderated by the presence of physical punishment of children (Table 3). As Fig. 1 shows, when the presence of physical punishment of children was reported, IPV was associated with a significant increase in the internalizing behavior problems score ($B = 5.149$, $p = 024$). However, IPV was not significantly related to internalizing behavior problems when physical punishment was reported as absent ($p = .230$). No other significant interactions were found between mothers' violent experiences (maternal CA, IPV) and potential moderating variables (child's sex and age, mother's and fathers' psychopathology).

Next, different models were built to test the mediator effect of parent's mental health and physical punishment of children. When the three first mediate criteria were found at bivariate level (Table 2), the mediation analyses were conducted separately for each of the hypothesized mediators. Given that the father's mental health was not significantly associated with maternal CA and IPV (see Table 2); it did not meet the criteria to test for mediation.

Fig. 2 shows the SEM for CBCL externalizing problems with physical punishment of children as mediator. The model achieved good fit values ($\chi^2 = 10.64$, $p = .16$; CFI = .94; RMSEA = .04; $R^2 = .102$). IPV was directly and positively associated with CBCL externalizing problems. Physical punishment of children partially mediated the association of IPV with CBCL externalizing problems ($z = 2.38$, $p = .017$). IPV was positively associated with physical punishment of children, and physical punishment was associated with CBCL externalizing problems.

Although the SEM for CBCL total also achieved adequate fit statistics ($\chi^2 = 5.63$, $p = .58$; CFI = .99; RMSEA = .01; $R^2 = .039$), the test for the significance of the paths showed that physical punishment was not a significant mediator of IPV ($z = 1.71$, $p = .086$). Likewise, the analyzed SEM showed that mothers' mental health did not mediate the effect of the maternal CA and IPV on CBCL externalizing ($z = .60$, $p = .55$; $z = .59$, $p = .55$, respectively); nor the link between IPV and CBCL total ($z = 1.86$, $p = .60$).

Table 2
Intercorrelations among study variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Any disorder	–																
2. Disruptive behavior	.36*	–															
3. Mood disorders	.21*	−.10*	–														
4. Anxiety disorders	.32*	−.10*	.24*	–													
5. Eating disorders	.00	−.05	.17*	.10*	–												
6. Elimination disorders	.12*	.11*	−.01	.00	−.06	–											
7. CBCL internalizing	.19*	.13*	.23*	.25*	.15*	.04	–										
8. CBCL externalizing	.17*	.49*	−.08	−.08	.04	−.00	.37*	–									
9. CBCL total	.20*	.44*	.03	.06	.09	.003	.73*	.84*	–								
10. CAFAS total	.20*	.30*	.24*	.10*	.20*	.07	.35*	.48*	.44*	–							
11. N° DSM-IV disorders	.42*	.38*	.43*	.51*	.10*	.29*	.38*	.27*	.36*	.46*	–						
12. Total n° symptoms	.32*	.44*	.32*	.21*	−.01	.11*	.30*	.43*	.48*	.53*	.66*	–					
13. Maternal CA	.01	.06	.002	.07	.12*	.02	.06	.12*	.11	.08	.10*	.08	–				
14. IPV	.00	.06	.05	.04	.05	.01	.06	.21*	.14*	.12*	.08	.20*	.14*	–			
15. Mother's psychopathology	.08	.05	.09*	.12*	.11*	.09*	.25*	.16*	.26*	.09*	.18*	.14*	.21*	.19*	–		
16. Father's psychopathology	.03	.06	.01	−.02	.07	.08*	.03	.08	.05	.06	.08	−.01	.06	.24*	.10*	–	
17. Physical punishment	.01	.18*	−.07	−.10*	−.00	.04	−.06	.22*	.14*	.11*	.02	.15*	.00	.22*	−.02	.09*	–

* $p < .05$.

Table 3
Predictive models of children's psychopathology and functional impairment.

	Logistic regression models[a] (95% CI)				
	Any disorder	Disruptive behav.	Mood disorders	Anxiety disorders	Eating disorders
Step 1					
Sex: male	1.95† (.94; 4.1)	3.19* (2.1; 4.8)	.315* (.21; .47)	.515* (.35; .75)	.360* (.24; .53)
Age (years)	1.26* (1.1; 1.5)	.975 (.90; 1.1)	1.31* (1.2; 1.4)	1.08† (.10; 1.2)	1.17* (1.1; 1.3)
Mother psych.	1.26 (.93; 1.7)	1.09 (.95; 1.2)	1.04 (.91; 1.2)	1.12† (.99; 1.3)	1.08 (.95; 1.2)
Father psych.	1.11 (.77; 1.6)	1.06 (.89; 1.3)	1.01 (.84; 1.2)	.952 (.80; 1.1)	1.16 (.97; 1.4)
PP	1.47 (.59; 3.6)	2.80* (1.7; 4.7)	.797 (.49; 1.3)	.665† (.43; 1.0)	1.12 (.70; 1.8)
Comorbidity	–	1.07 (.60; 1.9)	3.04* (1.0; 8.8)	.986 (.54; 1.8)	.719 (.34; 1.5)
Step 2					
Maternal CA	1.39 (.39; 4.9)	1.91* (1.0; 3.6)	.703 (.39; 1.3)	1.31 (.73; 2.4)	1.71† (.97; 3.0)
IPV	.66 (.23; 1.9)	.919 (.51; 1.7)	1.51 (.84; 2.7)	1.28 (.73; 2.2)	1.12 (.63; 2.0)
Change in R^2	.004	.010*	.006	.004	.009†
Step 3					
IPV X PP	–	–	–	–	–
Change in R^2	–	–	–	–	–
Total R^2	.067†	.149*	.243*	.085*	.162*

	Negative-binomial model[a]		Multiple regression[b] (95% CI)			
	Number disorders	Total symptoms	CBC interior.	CBC exterior.	CBC total	CAFAS total
Step 1						
Sex: male	.993 (.81; 1.2)	1.06 (.88; 1,3)	−.953 (−2.8; .91)	2.91† (.69; 5.1)	4.78† (−.72; 10.3)	3.44 (−1.8; 8.7)
Age (years)	1.05* (1.0; 1.1)	1.03 (.99; 1.1)	.589* (.19; .99)	.411† (−.07; .89)	.418 (−.75; 1.6)	5.56* (4.4; 6.7)
Mother psych.	1.05 (.99; 1.1)	1.03 (.97; 1.1)	1.14* (.59; 1.7)	.708* (.05; 1.4)	3.29* (1.7; 4.9)	.543 (−1.1; 2.2)
Father psych.	1.03 (.94; 1.1)	.972 (.90; 1.1)	.058 (−.74; .85)	.202 (−.76; 1.2)	−.105 (−2.5; 2.2)	1.06 (−1.3; 3.4)
PP	1.05 (.82; 1.3)	1.14 (.92; 1.4)	−1.90 (−4.5; .56)	4.77* (2.1; 7.4)	7.85* (1.2; 14.5)	10.9* (4.7; 17.1)
Comorbidity	–	–	–	–	–	–
Step 2						
Maternal CA	1.14 (.84; 1.5)	1.07 (.82; 1.4)	−.546 (−3.3; 2.2)	2.78† (−.44; 6.0)	5.05 (−3.0; 13.1)	6.90† (−.83; 14.6)
IPV	1.04 (.77; 1.4)	1.19 (.91; 1.6)	−2.16 (−5.7; 1.4)	3.58* (.23; 6.9)	3.65 (−4.6; 11.9)	5.53 (−2.1; 13.2)
Change in R^2	.002	.004	.001	.024*	.008	.009†
Step 3						
IPV X PP	–	–	7.31* (1.8; 12.8)	–	–	–
Change in R^2	–	–	.020*	–	–	–
Total R^2	.021	.015	.098*	.103*	.078	.173†

(–) Variable not included in the model.
CI: confident interval.
PP: physical punishment of children.
* Significant comparison ($p < .05$).
† Quasi-significant comparison ($p < .10$).
[a] OR: odds ratio.
[b] *B*-Coefficients.

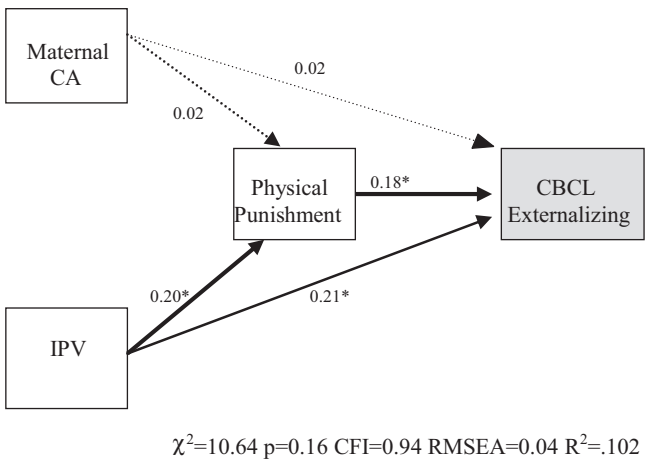

Fig. 2. Mediation model: effects of maternal CA, IPV on CBCL externalizing problems through physical punishment of children. Bold line indicates significant mediator path. Continuous line indicates significant association. Dashed lines represent effects that were not statistically significant. *$p < .05$.

Table 4
Maternal exposure to violence, psychopathology and functional impairment in children and adolescents.

	Maternal exposure of violence: %			Trends[c]	
	Not exposed to violence (n = 413)	One violence experience (n = 106)	Both violence experiences (n = 18)	Linear	Quadratic
DICA					
Disruptive behavior[a]	62.7	65.5	80.8	.047*	.332
Mood disorders[a]	38.3	44.8	24.2	.440	.146
Anxiety disorders[a]	57.2	69.4	51.2	.097†	.015*
Eating disorders[a]	31.7	41.0	39.4	.006*	.029*
Elimination disorder[a]	18.1	13.9	24.6	.634	.657
		Means (SE)		Linear	Quadratic
N° disorders[b]	3.2 (.19)	3.6 (.41)	3.6 (.98)	.730	.747
Total n° sympt.[b]	24.9 (1.3)	27.8 (2.8)	33.2 (8.2)	.319	.791
CBCL	(n = 246)	(n = 61)	(n = 13)	Linear	Quadratic
Internalizing[b]	14.1 (.51)	14.9 (1.1)	13.8 (2.4)	.898	.528
Externalizing[b]	15.6 (.62)	19.3 (1.3)	21.0 (2.8)	.062†	.597
Total[b]	51.2 (1.5)	56.8 (3.1)	57.4 (6.8)	.375	.576
CAFAS	(n = 387)	(n = 102)	(n = 18)		
Total score[b]	60.3 (1.5)	67.5 (2.9)	70.3 (6.9)	.164	.622

OR: odds ratio. SE: standard error. MD: means difference.
* Significant comparison (p < .05).
† Quasi-significant comparison (p < .10).
[a] Adjusted by children's sex and age, comorbidity, mother's psychopathology, father's psychopathology and physical punishment of children.
[b] Adjusted by children's sex and age mother's psychopathology, father's psychopathology and physical punishment of children.
[c] Trends considering three levels of exposure: not-exposed, exposed to violence in one moment (childhood or adulthood) and exposed to violence in both moments (childhood and adulthood).

The regression equation models showed that the maternal CA was not significantly associated with physical punishment of children (B = .811, p = .524); whereas there was a positive and significant association between maternal CA and mothers' mental health (B = 1.712, p = .001). However, mothers' mental health was not significantly associated with either eating (B = 1.088, p = .170) or disruptive disorders of children (B = 1.079, p = 239). Therefore, the maternal CA, eating and disruptive disorders of children were not associated through mothers' mental health.

Initial trend analyses show that the maternal exposure to CA only and to IPV only did not indicate a statistical difference in the criteria; these groups were merged into a single one. Next, mothers' lifetime exposure to violence was analyzed according to the following groups: those not exposed, those characterized by one period of violence (CA or IPV only) and those who had been subject to both violent periods (CA and IPV). Table 4 presents prevalence rates of psychopathology and functional impairment in children whose mothers have lifetime experiences of violence. The results of trend analyses are also shown. The analyses comparing the diagnostic categories of DSM-IV between the three groups revealed a significant linear trend for disruptive disorders, reaching its highest prevalence in clinical children when the mother had been exposed to violence in both periods (CA and IPV). Anxiety disorders showed a quadratic trend, reaching its highest prevalence when the mothers were exposed to violence in one period. As an unexpected result, eating disorders showed a positive linear trend: the prevalence of eating disorders tends to increase as the mother's exposure to violence increases; and also a quadratic trend, reaching its greatest increase in prevalence with the mother having exposure to violence in one period. CBCL externalizing and total mean scores and global functional impairment did not show a significant trend.

Discussion

In this study the independent effects of mothers' CA and IPV on their children's psychopathological problems showed few significant results and partially confirm the study's hypotheses; maternal CA was related to children's disruptive disorders and IPV was associated with an increase of externalizing behavior problems. Results also indicated that physical punishment of children moderated the effects of IPV on children's internalizing behavior problems. Moreover, the IPV had effects, either direct or indirect by physical punishment, on children's externalizing behavior problems. The cumulative effect of both maternal CA and IPV was associated with higher levels of disruptive disorders in children and adolescents.

Present findings support the negative outcomes in the offspring of childhood-abused mothers, which is consistent with previous studies (Collishaw et al., 2007; Dubowitz et al., 2001; Koverola et al., 2005; Morrel et al., 2003; Roberts et al., 2004). The results indicate that girls and boys, regardless of age, were similarly affected by mothers' CA, showing disruptive disorders. Parents' psychopathology and physical punishment of children did not act as moderators or mediators in the analyzed relationship. Mothers with CA experiences may have a more permissive parenting style and avoid the use of the authority due to their own experience of abuse by an adult (DiLillo & Damashek, 2003). Mothers' difficulties in establishing clear boundaries with their children could explain the increased disruptive problems in their offspring. On the other hand, the fact that the mothers' mental health was not a significant mediator could be related to the measure used in this study,

which is a mental health screening and does not assess the specific disorders in detail. Alternatively, there may be other mechanisms, not included in this research, through which mothers' CA may affect problems in children, such as negative life events, family type or maternal social support (Collishaw et al., 2007; Koverola et al., 2005).

The present study also shows that IPV was associated with children's externalizing problems, and this link was not modified by children's sex and age. The results did not provide support for findings which indicate that externalizing problems are greater for sons than for daughters from violent families (Evans et al., 2008). Consistent with previous reports (Kitzmann et al., 2003; Sternberg et al., 2006; Wolfe et al., 2003), the results suggest no differences in externalizing behaviors of IPV-exposed girls and boys. Likewise, the child's age did not influence the effect of IPV on externalizing problems, as has been reported by Evans et al. (2008), Kitzmann et al. (2003), and Wolfe et al. (2003). These results suggest that the relationship between IPV and clinical externalizing problems is similar for children and adolescents of both sexes. Additional research is needed to examine individual factors like temperament (Kitzmann et al., 2003), attitudes toward violent relationships (Wolfe et al., 2003) or aggressive interactions (McCloskey & Lichter, 2003), which could clarify a differential impact of IPV on girls and boys.

The current results indicated that physical punishment of children modified the relation between IPV and internalizing problems. Children who directly observed physical IPV and also suffered physical punishment by parents showed increased internalizing problems. These results confirm previous studies on the co-occurrence of IPV and physical aggression against children (Kaslow & Thompson, 2008; McCloskey et al., 1995; Osofsky, 2003). In line with other reports (Sternberg et al., 2006) the present findings suggest that there is a high risk of fearful and inhibited behaviors (internalizing problems) when children are exposed to both kinds of violence. Children living in physical-IPV context are affected by broad patterns of emotional, verbal and physical abuse (El-Sheikh, Cummings, Kouros, Elmore-Staton, & Buckhalt, 2008) and an increase in physical IPV is related to increased children's internalizing problems (Holt et al., 2008). McCloskey et al. (1995) suggested that after observing violent physical assaults and, at its most extreme, having seen the potential lethality of IPV, the experience of direct physical abuse against children could be more frightening and terrifying for them.

Path analyses indicated that physical punishment of children partially mediated the effect of IPV on externalizing problems. These results suggest that physical punishment is one pathway by which IPV may impact children's well-being (Salzinger et al., 2002). IPV may have a deleterious impact on parents' capacities, showing negative affects and physical abusive behaviors in parent-to-child interactions (Holt et al., 2008). Children who are abused may manifest serious problems coping with emotionally stressful situations and may develop negative representational models of family interactions, which may be generalized to their interactions with others (Cicchetti & Lynch, 1995). It is important to note that despite the inclusion of physical punishment as mediator, IPV maintains a direct effect on children's aggressive and antisocial behaviors (externalizing problems). These results are in line with prior findings, which suggest that independently of familial factors, IPV-exposed children may have been at increased risk of externalizing problems (McDonald et al., 2000) and conduct disorder (Fergursson & Horwood, 1998). As proposed by other researchers, it is complex to separate the unique effects of IPV from those of other risk factors that are often present in children's lives (Wolfe et al., 2003). Therefore, it is possible that the relationship found indicates that other environmental or genetic risk factors might contribute to psychological problems of IPV-exposed children (Fergursson & Horwood, 1998; McCloskey et al., 1995). On the other hand, literature suggests that IPV context affects children's emotional security, involving their abilities to regulate their emotions and behaviors, which in turn increase their externalizing problems (El-Sheikh et al., 2008). As a whole, the present finding may support what was proposed by McDonald et al. (2000) regarding the relevance of extending the investigation to examine IPV contexts as a precursor or a maintaining factor for externalizing problems in clinical children.

In terms of the cumulative effects, the results corroborate with and expand on prior research suggesting that each experience of violence suffered by the mothers adds to the overall burden, leading to a negative psychological functioning in children (Dubowitz et al., 2001). The findings of this study suggest that the cumulative violence suffered by mothers represents an important risk, specifically for disruptive mental health problems in children and adolescents. Mothers with a history of CA and their families may experience greater levels of psychosocial stress (Collishaw et al., 2007); in the context of IPV children may learn that aggression is permissible and acceptable in intimate relationships (Osofsky, 2003) and mothers may be less aware of their children's conduct problems or less able to effectively manage their aggression.

In this study we note that the strength of the association between maternal violent experiences, specially IPV and children's psychological outcomes is lower compared with previous research (Evans et al., 2008; Kitzmann et al., 2003; Wolfe et al., 2003). One possible explanation is that the effects of CA and IPV on children's outcomes decrease when statistically monitoring the covariates. IPV can differently impact children's functioning depending on other individual and contextual influences (Wolfe et al., 2003) and research findings vary depending on the extent to which researchers control for potentially confounding factors (Kitzmann et al., 2003).

This is one of the first studies providing evidence on lifetime maternal experiences of violence and child outcomes in the Spanish population. The results suggest that Spanish children whose mothers suffered CA, IPV or both, are at high risk of serious conduct problems, whereas children exposed to IPV and who were also physically abused are at greater risk of internalizing problems. Besides, it suggests that physical punishment of children is an important mechanism that contributes in part to explain externalizing problems of IPV-exposed children. These findings indicate potential targets of assessment and intervention for families seeking help in public mental health services. This study uses a semi-structured diagnostic interview (DICA), combining parents and children's reports, which contribute to a significant increase in the

predictive validity of children's outcomes and complements the report obtained only from parents (CBCL). Future research could be benefit from focusing on the diverse mechanisms through which maternal CA and IPV negatively impacts children's psychological functioning, including the assessment of different DSM-IV diagnoses.

This study has some limitations that should be considered when interpreting the results. Primarily, cautions should be taken due to the cross-sectional design of the study. Secondly, CA was based on retrospective self-reports, which might have led to consequent possible biases due to distortions in memory. Thirdly, IPV was assessed through the children's reports alone; therefore possible reporter biases must be considered. However, other researchers have stated that mothers' and children's reports about IPV were significantly correlated, suggesting that there is a shared perception of family violence (McCloskey et al., 1995). On the other hand, we registered the presence of physical violence between parents without defining the role of aggressor and/or the victim. Nevertheless, the evidence argues that women have a significantly higher risk of experiencing IPV and show greater negative impact on health, compared to men (Tjaden & Thoennes, 2000). Fourthly, due to the instances of child or mother self-reporting, the common method variance should be considered; although the assessment of DSM-IV disorders using semi-structured interviews (DICA-IV) combined the reports of both parents and children. In addition, the children's outcomes reported by mothers are limited and more accurately reflect the maternal perceptions of children's behavior. It would be useful for future research not to rely only on children's or parents' reports and to include other methods such as observational measures, which would increase external validity. Fifthly, the results of this research are based on a mental health clinical sample and cannot be generalized to other populations. Nevertheless, two reviews conducted by Evans et al. (2008) and Kitzmann et al. (2003) have reported that the link between IPV and child's outcomes did not vary significantly among samples recruited from clinical settings, battered women's shelters and community or school environments. Lastly, despite the large sample size, the classification based on the mothers' experiences of violence involved the emergence of some small groups which hindered the statistical power of some contrasts and the sensitivity to detect true discrepancies between the different groups analyzed. For instead, in the trend analyses, the fact that one maternal experience of violence was significantly linked to certain psychopathological problems of children (anxiety and eating disorders) may be due to the more proximal effects of IPV, as well as to the small size of the group with two experiences of violence. Therefore, more research is needed to examine a broad range of psychological problems in children and different maternal experiences of violence. Future research would benefit from the use of larger samples, particularly of mothers who have suffered both CA and IPV, to explore the potential mediational processes that may be operating. In this field, a key direction for future research is to examine more complex models to test how abuse of mothers in childhood could lead to intimate partner violence, which in turn could lead to their children's psychological problems. The present research is one step in this direction and future investigations could focus on multiple types of violence suffered by mothers over their lifetime and its links to mediators of children's outcomes. A relevant line of investigation is the impact that the interrelations among childhood abuse, adult violence and stress across lifespan could have on parenting (Banyard, Williams, & Siegel, 2003). Examining the outcomes of women who have suffered violence and also the outcomes of their children, research would help identify individual and family factors that may endorse dysfunctional behavior across family relations, as well as those which may buffer its harmful effects.

In the light of these study limitations, these findings have some practical implications. First, they confirm the clinical relevance of lifetime violence experienced by mothers as an important factor that can significantly affect children's psychological outcomes. Secondly, they could encourage clinicians to be aware that assessment of the mother's history of violence, as well as physical punishment against children, may help early detection of children who are at increased risk of serious psychopathological problems. It also promotes a timely identification of family factors that may influence or reduce the effectiveness of treatment (McDonald et al., 2000). Thirdly, findings show the need to develop effective preventive and therapeutic interventions for children and their families; clinicians and other health professionals could activate protective resources (individual, social or legal) to minimize the negative impact of violence. Finally, the question is raised about the role of research and clinical practice to recognize and reduce the level of violence within families as a protective factor for both this generation and the next.

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