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Tittle: Socio-cognitive variables involved in the relationship between violence exposure at home and child-to-parent violence

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Abstract

Introduction: The aim of the current cross-sectional study was to examine the role of social-cognitive processing in the relation between violence exposure at home and child-to-parent violence.

Methods. The study included 1,624 adolescents (54.9% girls) aged between 12 and 18 years (M_{age} = 14.7, *SD* = 1.7 years) from Jaén and Oviedo (Spain) who completed a set of questionnaires about violence exposure, child-to-parent violence and social-cognitive processing.

Results: The data revealed that exposure to violence at home is related to dysfunctional components of the social-cognitive processing, and that whereas some of these components (anger and aggressive response access) are positively related to child-to-parent violence motivated by reactive reasons, other components (the anticipation of positive consequences and justification of violence) are positively related to the instrumental use of the aggression against parents.

Conclusions: More prevention work is needed with children exposed to violence at home to reduce the risk of intergenerational transmission of violence. Moreover, treatment programs should include the intervention on the way in which adolescents process the information in their interactions with parents. These interventions must be focused on different components of the social-cognitive processing, depending on whether these aggressive behaviors are motivated by reactive or instrumental reasons.

Keywords: child-to-parent violence; adolescents; family violence; social-cognitive processing.

Socio-cognitive variables involved in the relationship between violence exposure at home and child-to-parent violence

Child-to-parent violence (CPV) was initially defined several decades ago with the term "Battered Parent Syndrome", which exclusively included physical aggression and verbal/nonverbal threats of physical harm (Harbin & Madden, 1979). The concept was expanded over time and is currently defined as "any act of a child that is intended to cause physical, psychological or financial damage to gain power and control over a parent" (Cottrell, 2001, p.3). More recently, Pereira et al. (2017) highlight that, in CPV cases, it is necessary to exclude isolated acts of violence and also those violent acts produced under a state of diminished consciousness (e.g., those acts caused by abstinence syndrome or by psychological disorders). Following to Cottrell (2001), psychological violence refers to those behaviours intended to emotionally hurt parents (e.g., intimidating, running away from home, threatening, etc.). Verbal violence is a type of psychological abuse and includes acts such as shouting, challenging, belittling, etc. Physical violence refers to acts such as pushing, spitting, kicking, punching, etc. Finally, financial abuse includes behaviours such as stealing money or parents' belongings, selling parents' possessions, destroying the home or parents' belongings, etc.

Regarding the magnitude of this social problem, in Spain, the General Prosecutor Office (2019), in its last report, highlighted a notable increase in CPV cases over the last decade (for example, a total of 4,335 proceedings initiated in 2016, 4,665 in 2017 and 4,833 in 2018). Nonetheless, as these data refer only to those reported cases at Juvenile Court, it is supposed that many cases of CPV remain unknown. Studies with community samples can provide this information. In Spain, a recent study with 1,272

adolescents revealed that around 10.5% of the participants had physically assaulted their parents at least once in the past year, and virtually all adolescents had displayed some behaviour regarded as psychological aggression (Calvete, Gámez-Guadix, & García-Salvador, 2015). Studies in the United States and Germany, with wide samples of adolescents, report between 6-22% of physical violence, between 45-75% of verbal violence and around 59% of financial violence (Beckman, Bergmann, Fischer, & Möble, 2017; Margolin & Baucom, 2014).

This type of family violence presents some peculiarities, especially concerning the victim and the perpetrator who are implied, which make the difference with respect to other types of violence (Brezina, 1999). Previous literature indicates that adolescents with CPV offenses present a different psychosocial profile when comparing both to other young offenders and adolescents from general population (Contreras & Cano-Lozano, 2014, 2015, 2016a; Ibabe, Arnoso, & Elgorriaga, 2014). In this line, although studies on CPV have been carried out with different samples (forensic, clinical and community) and from different cultures, adolescents who assault their parents present some features in common. Research indicates that these juveniles have lower emotional intelligence, more antisocial and less prosocial attitudes than nonaggressive adolescents (Contreras & Cano-Lozano, 2016b), and that they tend to have poor school performance and other maladaptive behaviors (Armstrong, Cain, Wylie, Muftic, & Bouffard, 2018). Other studies have revealed that adolescents who are violent toward their parents are prone to social maladjustment (Ibabe, Jaureguizar, & Bentler, 2013) and to have emotional difficulties (Beckman et al., 2017). Given that this type of violence appears within the family setting, many of the previous studies have analyzed variables related to the family structure and dynamics (e.g., Beckman et al., 2017; Contreras & Cano-

Lozano, 2014). One variable that has received great attention is the violence exposure at home. Many studies in the field of CPV have found that adolescents who abuse their parents are more likely to have been exposed to violence within the family setting (Beckmann et al., 2017; Contreras & Cano-Lozano, 2016a; Ibabe et al., 2013; Margolin & Baucom, 2014; Pagani et al., 2004, 2009). However, the occurrence of violence exposure at home, as a risk factor, does not explain by itself how this variable leads an adolescent to respond in a violent way toward their parents. Thus, what are the processes through which experiences of exposure to violence has its effects on CPV?

The relationship between violence exposure and the development of aggressive behaviors might be mediated by socio-cognitive variables. The social information processing (SIP) model (Crick & Dodge, 1994; Dodge & Pettit, 2003) posits that emotional and cognitive processes during social interactions are key variables that mediate the relationship between risk factors and violent behavior. This model proposes that life experiences (along with context and dispositions) leads children to develop their own social knowledge about their world, which correspondingly guides their social information processing when facing a social stimulus. This social information processing is what leads to antisocial behavior and mediates the effects of life experiences on later aggressive behavior. The aggressive adolescent's response to a social situation occurs as sequential steps involving emotional and cognitive processes: 1) selective attention to hostile social cues and attribution that others are being hostile toward themselves; 2) rapid access to aggressive response; 3) evaluation of the aggressive response as morally acceptable and as relatively likely to lead to desired goals; and 4) enactment of a selected (aggressive) response.

Although it is not a component of the SIP by itself, another crucial aspect of the social knowledge is an individual's beliefs about the normative appropriateness of the use of aggression (Dodge & Pettit, 2003), as these beliefs also partially mediate the effects of the context on violent behaviors (Guerra, Huesmann, Tolan, Van Acker, & Eron, 1995). Furthermore, emotions play an important role as it can influence many of the mentioned steps (Dodge & Pettit, 2003). Accordingly, Lemerise and Arsenio (2000) added some emotional components to this model, such as the interpretation that the other is happy about what happened, the own experience of anger, and deficits in emotion regulation. In summary, children with experiences of violence exposure could make hostile attribution about others' intentions, as they could have learned that others can hurt them intentionally. Furthermore, children from violent homes internalize that using aggression is an appropriate way to deal with interpersonal conflicts, so they tend to justify the use of violence. These children might also access an aggressive response more easily when facing a provocation (real or not), as they could have become habituated to violence.

Even though the role of socio-cognitive variables in aggressive behavior is well documented, very few studies have analyzed these variables in relation to CPV. Concretely, Calvete et al. (2015) conducted a study with adolescent students, assessing psychological and physical violence towards parents by means of the Child-to-Parent Aggression Questionnaire (CPAQ; Calvete et al. 2013). These authors highlight the role of hostile attributions and anger in the development of CPV. Moreover, Contreras and Cano-Lozano (2016a), in their study with juveniles who had committed CPV offenses, indicated that exposure to violence at home was related to the adolescents' hostile social perception. Furthermore, it has also been found that CPV offenders report a more

hostile perception of their parents and their home when compared to other types of young offenders and non-offender adolescents, along with a lower ability to anticipate and understand the consequences of social behaviors and to select appropriate means to achieve the goal of a social behavior (Contreras & Cano-Lozano, 2015). More recently, Orue, Calvete and Fernández-González (2019), using the CPAQ (Calvete et al. 2013) to assess CPV, report that anger predicts CPV toward the mother, whereas the aggressive response access and violence justification predicts CPV toward the mother and the father.

Otherwise, some researchers have delved deeper into this model to investigate different tendencies of violent behaviors, such as reactive and instrumental violence, and their unique social-cognitive correlates, showing that both types of violence are preferentially related to biases associated with different steps of the social-cognitive processing (Arsenio, Adams, & Gold, 2009). On one hand, reactive violence, which refers to the use of aggression in response to a perceived provocation (Crick & Dodge, 1996), is characterized by intense anger (Poulin & Boivin, 2000) and is related to early stages of the SIP, such as hostile attributions (Arsenio et al., 2009; Orobio de Castro, Veerman, Koops,Bosch, & Monshouwer, 2002). On the other hand, instrumental violence, which implies the use of aggression to obtain what one wants (Crick & Dodge, 1996), is often associated with later stages of outcome-related processing, including positive evaluations about violence and its consequences, such as expectations that violence is both an effective way to achieve desired goals and that one can enact aggressive responses effectively (Arsenio et al., 2009; Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Smithmyer, Hubbard, & Simons, 2000). In addition, instrumental violence seems to be related to a deficit of empathic responsiveness (Arsenio, 2006;

Smithmyer et al., 2000). In the field of CPV, some studies have analyzed the reasons (reactive or instrumental) that adolescents give to explain why they behave aggressively toward their parents, as this aspect might be crucial for the understanding of the origin and maintenance of CPV. Notwithstanding, studies on this issue are very scarce and results indicate that both reactive and instrumental reasons can be present in CPV cases (Calvete et al., 2013; Calvete et al., 2015; Contreras, Bustos-Navarrete, & Cano-Lozano, 2019).

The Current study

Investigating the relationship between violence exposure at home, socio-cognitive variables and the reactive or instrumental use of the aggression can contribute to clarifying the nature of this type of family violence. Thus, the purpose of the current study is to analyze the role of the social-cognitive processing in the relationship between violence exposure at home and CPV. The hypotheses of this study were as follows: 1) EV home is positively related to some components of the social-cognitive processing, concretely, to hostile attribution, anger, aggressive response access, the anticipation of positive consequences of aggression and violence justification (Crick & Dodge, 1994; Dodge & Pettit, 2003), and negatively related to empathy (Lemerise & Arsenio, 2000); 2) Hostile attribution, anger and aggressive response access, which represent early stages in the social-cognitive processing, is positively related to CPV motivated by reactive reasons (Orobio de Castro et al., 2002; Poulin & Boivin, 2000); 3) the anticipation of positive consequences of aggression and violence justification is positively related to CPV motivated by instrumental reasons, whereas empathy shows a negative relation with the instrumental use of CPV (Arsenio 2006; Dodge et al., 1997; Smithmyer et al., 2000).

Method

Participants

The sample was made up of 1,624 adolescents (54.9% girls) aged between 12 and 18 years (M_{age} = 14.7, *SD* = 1.7 years) from different high schools in Jaén (75.6%) and Oviedo (24.4%) (Spain). The majority of the parents were married (83.4%). Their socioeconomic levels, according to the classification in other studies in the Spanish context (e.g., Rechea, Fernández, & Cuervo, 2008; Romero, Melero, Cánovas, & Antolín, 2005), were as follows: 3.1% low, 74.5% medium and 22.4% high.

Materials

Child-to-parent Violence. The Child-to-parent Violence Questionnaire (CPV-Q) (Contreras et al., 2019), which consists of 14 parallel items (14 items for the father and 14 items for the mother) measuring different acts of psychological (4 items), physical (3 items) and financial violence (3 items), together with behaviors demonstrating control and domain over parents (4 items), a crucial aspect in the definition of the concept (Cottrell, 2001) and that is not included in previous instruments. Adolescents are asked to indicate how often they have carried out each of the behaviors against their parents in the past year using a Likert scale: 0 (never), 1 (rarely = it has occurred once), 2 (sometimes = 2-3 times), 3 (many times = 4-5 times) and 4 (very often = more than 6 times). It also includes 8 reasons for the aggressions against parents, grouped into instrumental reasons (IR) (5 items) and reactive reasons (RR) (3 items), also measured using a Likert scale: 0 (never), 1 (sometimes), 2 (almost always) and 3 (always). The CPV-Q has been shown to have excellent psychometric properties in a sample of 1,386 Spanish adolescents, with both exploratory and

confirmatory factor analyses providing strong empirical support for its factor structure and reliability (Contreras et al., 2019).

Violence Exposure at Home. The Exposure to Violence Scale (Orue & Calvete, 2010), subscale of Exposure to Violence (EV) at Home, which assesses both direct and indirect exposure to violence at home. An example of a direct exposure item is "How often has somebody hit you at home?", and another one considering an indirect exposure item is "How often have you seen somebody hitting another person at home?" Each item is rated on a 4-point response scale ranging from 0 (never) to 4 (every day).

Social Information Processing. The Social Information Processing (SIP) in Child-to-parent Conflicts Questionnaire (Calvete et al., 2015). Adolescents were asked to imagine three scenarios consisting of different conflicts with parents. There were nine items for each scenario to assess five components of SIP, and each item was responded to using a 5-point response scale ranging from 0 (not at all) to 4 (in a great extent): (a) hostile attribution (HA), which included the attribution of negative intentions and positive emotions in parents (two items per scenario); (b) anger (one item per scenario); (c) aggressive response access (ARA), including both physical and psychological aggressions (two items per scenario); (d) the anticipation of positive consequences of the aggressive action (PC) (one item per scenario); and (e) empathy (one item per scenario).

Justification of Violence. The Justification of Violence Subscale of the Irrational Beliefs Scale for Adolescents (Cardeñoso & Calvete, 2004) was used to assess justification of violence (JV), which consists of nine items that reflect the idea that aggression is appropriate in different situations (e.g., "Sometimes you have to hit others

because they deserve it"). Adolescents were asked to respond in a 4-point response scale ranging from 1 (completely disagree) to 4 (totally agree).

Procedure

First, authorization by the Ethics Committee of the University of Jaén (Spain) to conduct this study was obtained. Then, authorizations by the Public Administration in Education and the high schools' directors were also obtained. Following to Pereira et al. (2017), none of the adolescents who participated in this study presented any disorders that produced a state of diminished consciousness. The school-counselling department provided this information. The parents' informed consent for us to assess their children and adolescent's informed consent were also requested. Each participant received an identification code and completed the questionnaires in a group setting in their classrooms. Three evaluators from the research group, who were specifically trained for this protocol, conducted the evaluations. No incentive was offered in exchange for participation.

Data Analysis

All analysis in this study was conducted with R software. The α value for all statistical tests was set to .05. Before the factorial treatment of the data, a data screening was carried out to evaluate the distribution of the data and its suitability for factorial treatment. In addition, it was confirmed that the scales maintained the internal consistency and validity in the current sample with CFA (Kline, 2015). The analyses were conducted with lavaan R package (Yves Rosseel, 2012). The robust maximum likelihood (MLR) with robust standard errors and a scaled test statistic was used as an estimation method for CFA and SEM analysis (Finney & DiStefano, 2013) to account for multivariate nonnormality. The estimation errors resulting from CFA that shared the

same latent variable with a modification indices (IM) greater than 10 were covariates (Hermida, 2015). The graphic design of the SEM models was made with the free software Ωnyx (Oertzen, Brandmaier, & Tsang, 2015).

Results

Data screening

Eighty-one participants (4.98% of the total) left some data unanswered in the survey. Multiple imputation was made with the MICE package of R (Buuren & Groothuis-Oudshoorn, 2011). It was observed that some items showed a Kurtosis above 7, which leads us to assume that our data do not present a multivariate normality distribution (West, Finch, & Curran, 1995).

-----Table 1, insert here-----

Confirmatory factor analysis of the scales

Since the scales have never been used in the same set all together, we tested that they maintained their internal consistency and validity with our sample. Thus, the adjustment of each of the subscales used in the proposed model and confirmatory factor analysis (CFA) was analyzed. The analysis of the reliability of all the scales in the set showed good to excellent indices (Cronbach's $\alpha = .916$, McDonald's $\omega = .929$)

Exposure to Violence (EV). The standardized factor loading of the observed variables of the scale varies between .570 (SE 0.019) to .725 (SE 0.019). The CFA shows an excellent fit, $\chi^2 (5) = 43.6$, $p < .001$ (see Table 1 for more detail), with CFI = .988 and RMSEA = .069 (Hair, Black, Babin, & Anderson, 2010). The reliability of this scale was demonstrated with Cronbach's $\alpha = .832$ and McDonald's $\omega = .834$.

Child–to–parent Violence Questionnaire for Mother (CPV–Q M). This subscale is composed of 4 latent variables: psychological, physical, financial, and

control/domain. Standardized factor loading ranging from .350 (SE 0.010) to .793 (SE 0.020). The standardized covariation indices between factors range from .522 (SE 0.028) for psychological and control/domain factors, to .718 (SE 0.039) for economic and control/domain factors. The CFA showed a good model fit, χ^2 (68) = 483, $p < .001$ (see Table 1 for more detail), with CFI = .928 and RMSEA = .061 (Hair et al., 2010). The reliability of this scale was demonstrated with Cronbach's α = .792 and McDonald's ω = .827.

Child–to–parent Violence Questionnaire for Father (CPV–Q F). Standardized factor loading ranging from .331 (SE 0.010) to .781 (SE 0.019). The standardized covariance estimated range from .051 (SE 0.033) for psychologic and control/domain factors, to .785 (SE 0.029) for physical and control/domain CPV factors. The CFA showed a good model fit, χ^2 (67) = 590, $p < .001$ (see Table 1 for more detail), with CFI = .907 and RMSEA = .069 (Hair et al., 2010). The reliability of this scale was demonstrated with Cronbach's α = .788 and McDonald's ω = .823.

Reasons Subscale (Rea). The subscale reasons for CPV has two latent variables, instrumental reasons (IR) and reactive reasons (RR). Standardized loading was from .415 (SE 0.016) to .783 (SE 0.017). The standardized covariations indices between these two factors were .419 (SE 0.036). The CFA showed an excellent model fit, χ^2 (16) = 122, $p < .001$ (see Table 1 for more detail), with CFI = .958 and RMSEA = .063 (Hair et al., 2010). The reliability of this scale was demonstrated with Cronbach's α = .705 and McDonald's ω = .717.

Social Information Processing in Child-to-Parent Aggression. This subscale measures five different latent variables: hostile attribution (HA), anger, aggressive response access (ARA), positive consequences (PC), and empathy. The standardized

loads for the observed variables were from .245 (SE 0.019) to .888 (SE 0.022). The standardized covariation indices between factors range from -.024 (SE 0.027) for ARA and empathy factors, to .781 (SE 0.022) for HA and anger factors. The CFA showed an acceptable model fit, χ^2 (169) = 1811, $p < .001$ (see Table 1 for more detail), with CFI = .866 and RMSEA = .077 (Hair et al., 2010). The reliability of this scale was Cronbach's $\alpha = .785$ and McDonald's $\omega = .812$.

Justification of Violence (JV). This subscale has only one latent variable. The standardized loads range from .254 (SE 0.022) to .772 (SE 0.020). The CFA showed an excellent model fit, χ^2 (22) = 111, $p < .001$ (see Table 4 for more detail), with CFI = .971 and RMSEA = .049 (Hair et al., 2010). The reliability of this scale was demonstrated with Cronbach's $\alpha = .761$ and McDonald's $\omega = .778$.

------Table 2, insert here-----

Approach to SEM model

In the previous section, it is shown how subscales work in a very acceptable way, generally, in the evaluation of the different proposed factors. The theoretical model proposed to describe the CPV is represented in Figure 1. The figure presents only the structural model, omitting the observed variables for a better understanding. The latent variables are represented by circles, whereas the arrows show the structural component for the model. The theoretical model presented is proposed for both CPV in mothers and in fathers. As presented in Figure 1, the EV factor is related to HA, anger, ARA, PC, empathy and JV. In addition, whereas HA, anger and ARA are related to RR, the PC, empathy and JV are related to IR.

-----Fig. 1, insert here------

Figure 2 shows the results of the SEM analysis for CPV model in mother (a) and father (b). The numbers on the arrows indicate the standardized values of the regressions between the different factors. Dashed arrows represent significant relationships. Table 2 presents detailed results on the regressions of the factors in the SEM analysis for father and for mother models. As shown in Figure 2, the model fits in a similar way for both mothers and fathers. All the relationships proposed in the model were significant, except for the relationship between EV and HA and any relationship in which empathy was involved (Nonsignificant relationships are marked with straight arrows). The standardized structural regression coefficients between latent variables showed a range between .842 (EV-HA) and -.013 (EV-Empathy) for mothers, and between .840 (EV-HA) and -.012 (EV-Empathy) for fathers. Both hypothetical models show a good empirical adjustment, χ^2 (1500) = 3497.89, $p < .001$, with CFI = 0.905, TLI = 0.896, SRMR = 0.057, RMSEA = 0.034 (90% CI [0.033, 0.036]) for mother, and χ^2 (1500) = 3541.22, $p < .001$, with CFI = 0.903, TLI = 0.893, SRMR = 0.056, RMSEA = 0.034 (90% CI [0.033, 0.036]) for father (Hair et al., 2010).

---Fig. 2 Insert here-----

Discussion

The current study aimed to examine the role of the social-cognitive processing in the relationship between EV at home and CPV. The SIP model (Crick & Dodge, 1994; Dodge & Pettit, 2003) establishes that life experiences lead children to develop their own social knowledge about their world. Thereby, Hypothesis 1 established that EV home would be positively related to some components of the social-cognitive processing, concretely, to hostile attribution, anger, aggressive response access, the anticipation of positive consequences of aggression and violence justification, and

negatively related to empathy. The results partially confirm this hypothesis. It seems that through learning mechanisms (Bandura, 1977), EV promotes the development of maladaptive social-cognitive processing. To be precise, EV at home is positively related to hostile attributions, which is totally congruent with the previous work by Contreras and Cano-Lozano (2016a), who found that EV at home was related to the adolescents' hostile social perception. EV at home is also positively related to anger, which reflects a failure in emotional regulation. Previous literature has indicated that the experience of violence at home may contribute to the development of emotional dysregulation in youth (Allwood & Bell, 2008). Violence exposure is also positively related to the aggressive response access, anticipation of positive consequences of aggression, and justification of violence. This means that, in CPV cases, adolescents with experiences of violence exposure at home have normalized the use of violence, so they might access an aggressive response more easily when facing a provocation (real or not) from parents, and they have also learned that using aggression is an appropriate manner to confront interpersonal conflicts, so they tend to justify the use of violence and, consequently, to have positive expectations about the outcomes of aggression. However, exposure to violence is not related to empathy in this study, so further research on this relationship is needed.

Otherwise, with the aim of exploring the unique socio-cognitive correlates of each aggressive tendency (reactive and instrumental), the differential associations between the components of the social-cognitive processing and CPV motivated by reactive and instrumental reasons were analyzed. Hypothesis 2 stated that hostile attribution, anger and aggressive response access would be positively related to CPV motivated by reactive reasons. This hypothesis is partially confirmed, as only anger and

aggressive response access were positively related to the reactive type of CPV, both for the mother and for the father. On one hand, the relevance of the anger to predict the adolescent violence against parents has been previously demonstrated (Calvete et al., 2015; Orue et al., 2019). Anger represents a failure in emotional regulation and, concretely, this is one of the features of the adolescents who abuse their parents, as they have difficulties identifying, expressing and controlling emotions and feelings (Contreras & Cano-Lozano, 2016b). Related to this variable, Contreras and Cano-Lozano (2015) revealed that these adolescents are prone to be impulsive and become upset easily, displaying unpredictable reactions with anger outbursts. Furthermore, anger is one of the most frequent reasons to behave aggressively toward parents (Calvete & Orue, 2016), which reflects the importance of angry feelings in this type of aggressions (Orue et al., 2019). On the other hand, the strongest relation was found between the aggressive response access and CPV motivated by reactive reasons. As Orue et al. (2019) stated, its proximity with the final decision of acting aggressively explains why this is one of the most important components of social-cognitive processing to predict aggression. The current study extends these results, not only highlighting the importance of the anger and aggressive response access in CPV cases, but also adding their specific relation with the reactive type of CPV. However, hostile attribution is not related to reactive reasons for CPV in the whole model proposed, which is inconsistent with previous literature (Calvete et al., 2015; Contreras & Cano-Lozano, 2015, 2016a) and an unexpected result.

The third hypothesis stated that the anticipation of positive consequences of aggression and violence justification would be positively related to CPV motivated by instrumental reasons, whereas empathy would show a negative relation with the

instrumental use of CPV. This hypothesis is partially confirmed, as the results reveal that the anticipation of positive consequences and justification of violence are positively related to the instrumental use of CPV, both for the mother and for the father. Several studies highlight the instrumental nature of CPV, as many adolescents use the aggression against parents to obtain certain positive reinforcements, such as to obtain permission to go out, to extend the time to return home at night or to avoid unwanted tasks (Calvete & Orue, 2016; Contreras et al. 2019). This is totally congruent with the definition of CPV, in which the intention to control and dominate parents is a crucial component of this type of violence (Cottrell 2001), that results in an inversion of conventional power relationships within the family (Tew & Nixon, 2010). Otherwise, some authors have noted that instrumental violence is related to a deficit of empathic responsiveness (Arsenio, 2006; Smithmyer et al., 2000), and in actuality, Arsenio et al. (2009) used the expression "cold-blooded" adolescents to refer to those juveniles who victimize others for personal gain without regard for potential victims (p. 1739). Notwithstanding, and contrary to our expectations, in our study the empathy is not related to the instrumental use of CPV in the whole model, so future studies should deepen into this variable and its relationship with CPV.

In summary, our results indicate that the exposure to violence at home influences the development of maladaptive social-cognitive processing in adolescents. In addition, these maladaptive elements of social-cognitive processing are related to different types of CPV behaviors. On one hand, the experience of violence within the family setting promotes the emotional dysregulation expressed by the anger, as along with the higher accessibility to aggressive responses (as adolescents have become habituated to violence), which in turn are positively related to reactive type CPV. On

the other hand, juveniles who have been exposed to violence at home may have normalized the use of aggression in their lives; thus, they tend to justify violence and to choose it as the primary strategy to solve conflicts or to obtain what they want, so they are more likely to engage in instrumental type CPV.

Limitations, strengths, and future directions

This study presents some limitations. First, it is based on cross-sectional data; therefore, it would be interesting to conduct future longitudinal studies to go in-depth into the relationships among the variables of this model. Moreover, it would be necessary to add reports from parents to complement the information. In addition, these data refer to a wide sample of Spanish adolescents; thus, this aspect must be considered when generalizing the results to other countries. Regarding the strengths, this study explores not only the relation between the experience of violence at home and the components of the social-cognitive processing in CPV cases, but also which of these components are related to the CPV motivated by reactive reasons and those that are related to the instrumental use of this type of violence. These results have several noteworthy implications. In respect of the research field, our study contributes to the understanding of the mechanisms involved in the development of CPV behaviors in a wider context of violence within the family setting. Future studies might extend these results, examining, for example, the differences of this model between boys and girls. Regarding the professional context, to know these details is crucial for the design of specific treatment programs and follow-up plans. Hence, more prevention work is needed with children exposed to violence at home to reduce the risk of intergenerational transmission of violence. However, to establish a simple association between EV at home and CPV would not be appropriate. Not all the children who experience some

type of violence within the family context will inevitably become potential abusers in the future. Moreover, the intervention on socio-cognitive variables is essential, specifically on the way in which adolescents process the information in their interactions with parents. Concerning CPV behaviors motivated by reactive reasons, interventions should focus specifically on the training of anger management and cognitive strategies to generate alternative responses different from aggression. For adolescents who abuse their parents for instrumental purposes, these interventions might include, specifically, the modification of their dysfunctional beliefs about the use of violence and the learning of strategies to anticipate the consequences of their behaviors and to solve interpersonal conflicts.

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Table 1

Test for Exact Fit	χ^2	*df*	*p*
EV[a]	43.6	5	< .001***
CPV–Q M[b]	483	68	< .001***
CPV–Q F[c]	590	67	< .001***
Rea[d]	122	16	< .001***
SIP[e]	1,811	169	< .001***
JV[f]	111	22	< .001***

Fit Measures

					RMSEA 90% CI			
	CFI	TLI	SRMR	RMSEA	Lower	Upper	AIC	BIC
EV[a]	.988	.965	.016	.069	.051	.088	21 963	22 082
CPV–Q M[b]	.928	.904	.044	.061	.056	.066	33 601	33 876
CPV–Q F[c]	.907	.874	.049	.069	.064	.074	31 850	32 130
Rea[d]	.958	.926	.034	.063	.053	.074	24 109	24 260
SIP[e]	.866	.833	.086	.077	.074	.080	65 193	65 640
JV[f]	.971	.953	.026	.049	.040	.059	29 663	29 836

Model fit parameter estimates by subscale

Note. The fits indices shown by the parameters are good or excellent in all cases. ****p* < .00.

[a] Subscale of exposure to violence.

[b] Subscale of child–to–parent violence questionnaire for mother.

[c] Subscale of child–to–parent violence questionnaire for father.

[d] Subscale of reasons.

[e] Subscale of social information processing in child-to-parent aggression.

[f] Subscale of justification of violence.

Table 2

Regression factors from Structural Equation Modeling for Mother and Father.

Mother		Estimate	SE	*z*	*p*	Stand. Estimate
EV[a]						
	HA[b]	1.559	0.199	7.849	.000***	.842
	Anger	1.213	0.086	14.030	.000***	.772
	ARA[c]	1.044	0.113	9.274	.000***	.722
	PC[d]	0.235	0.073	3.242	.001***	.229
	Empathy	-0.013	0.030	-0.430	.667	-.013
	JV[e]	0.581	0.071	8.207	.000***	.502
RR[f]						
	HA[b]	0.113	0.076	1.482	.138	.121
	Anger	0.159	0.055	2.888	.004***	.145
	ARA[c]	0.762	0.171	4.448	.000***	.638
IR[g]						
	PC[d]	0.177	0.058	3.034	.002***	.152
	Empathy	-0.008	0.033	-0.228	.819	-.006
	JV[e]	0.534	0.058	9.226	.000***	.515
CPV–Q M[h]						
	RR[f]	1.310	0.452	2.898	.004***	.764
	IR[g]	1.044	0.337	3.101	.002***	.423
Father		Estimate	SE	*z*	*p*	Stand. Estimate
EV[a]						
	HA[b]	1.550	0.188	8.229	.000***	.840

	Anger	1.226	0.088	13.958	.000***	.775
	ARA[c]	1.039	0.110	9.409	.000***	.720
	PC[d]	0.232	0.072	3.226	.001**	.226
	Empathy	-0.012	0.030	-0.394	.694	-.012
	JV[e]	0.581	0.070	8.250	.000***	.502
RR[f]						
	HA[b]	0.096	0.069	1.389	.165	.109
	Anger	0.188	0.056	3.380	.001**	.185
	ARA[c]	0.658	0.147	4.471	.000***	.588
IR[g]						
	PC[d]	0.184	0.060	3.059	.002**	.155
	Empathy	-0.001	0.034	-0.031	.975	-.001
	JV[e]	0.559	0.061	9.221	.000***	.531
CPV–Q F[i]						
	RR[f]	0.692	0.129	5.380	.000***	.644
	IR[g]	0.587	0.093	6.273	.000***	.412

Note. $*p < .05$, $**p < .01$, $***p < .00$.

[a] Values for the variable exposure to violence.

[b] Values for the variable hostile attribution.

[c] Values for the variable aggressive response access.

[d] Values for the variable positive consequences.

[e] Values for the variable justification of violence.

[f] Values for the variable reactive reasons.

[g] Values for the variable instrumental reasons.

[h] Values for the variable child–to–parent violence for mother.

[i] Values for the variable child–to–parent violence for father.

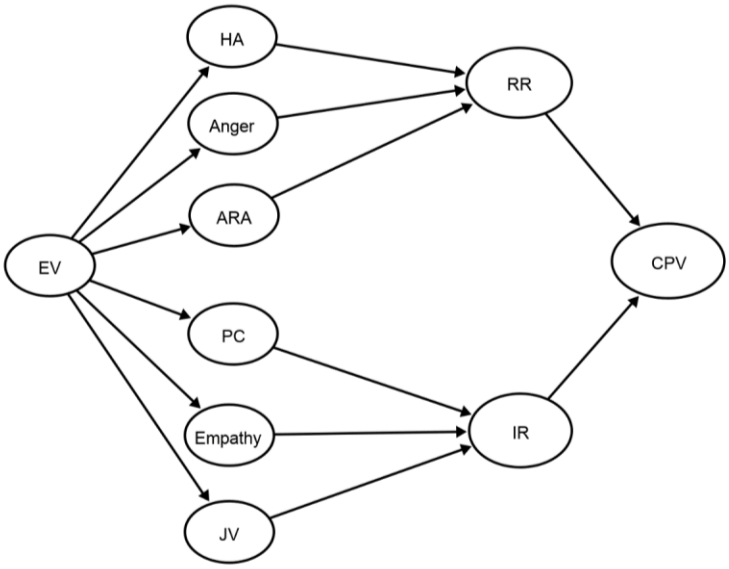
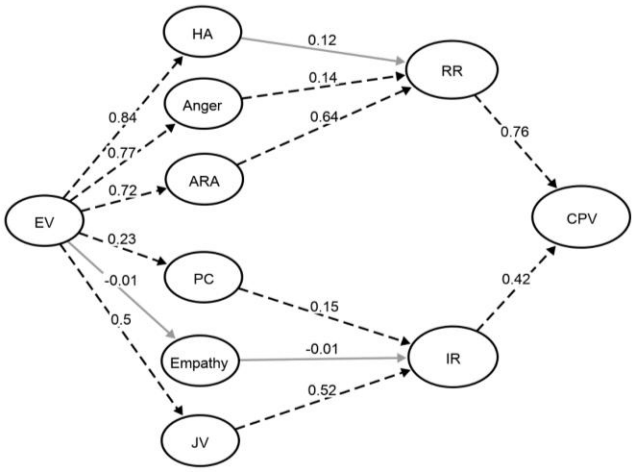


Fig. 1. SEM Theoretical Model for CPV for mother and father. The circles represent the latent variables and the arrows relate to the regression between variables. EV: exposure to violence, HA: hostile attribution, anger, ARA: aggressive response access, PC: positive consequences, empathy, JV: justification of violence, RR: reactive reasons, IR: instrumental reasons, CPV: child–to–parent violence.

a. Mother



b. Father

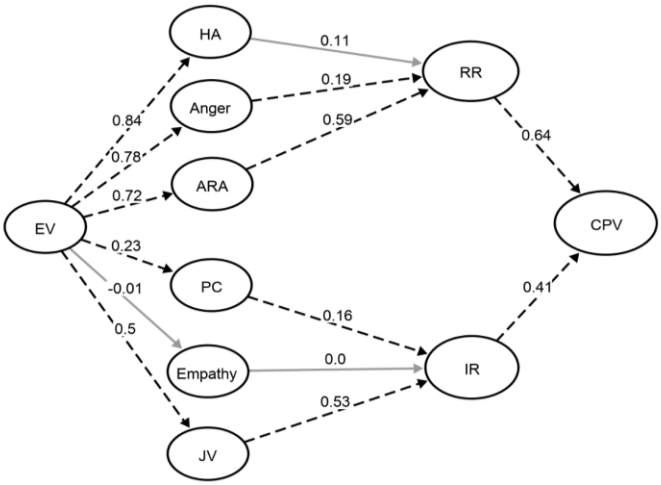


Fig. 2. Results for the structural equation models. The circles represent the latent variables, and the arrows relate to the regression between variables. EV: exposure to violence, HA: hostile attribution, anger, ARA: aggressive response access, PC: positive consequences, empathy, JV: justification of violence, RR: reactive reasons, IR:

instrumental reasons, CPV: child–to–parent violence. Discontinuous arrows represent significant relationships, while continuous gray arrows indicate nonsignificant relationships. The numbers indicate the standardized value of the factor load of each variable in the model. The upper part, the model for mothers is presented (a) and in the bottom part, the model for parents (b).

Acknowledgements

Tittle: Socio-cognitive variables involved in the relationship between violence exposure at home and child-to-parent violence

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