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Child-to-parent Violence and Parent-to-child Violence: A Meta-analytic Review

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ABSTRACT

In order to examine the literature on the relationship between child-to-parent violence and parent-to-child violence, a meta-analytic review was designed with 26 effect sizes assessing the relationship between child-to-parent and parent-to-child violence in 19 primary studies. Correlational effect sizes were computed and corrected for sampling error, and predictor and criterion unreliability. The results showed a significantly positive, medium magnitude ($\rho = .36$) mean true effect size for the relationship between child-to-parent violence and parent-to-child violence. Similar results were found for direct and vicarious victimization. The probability of developing child-to-parent violence for children victimized by parents increased 71% as compared to non-victimized children. The child-to-parent violence type (physical or psychological), and the population (judicial or community) were analysed as moderators. The results revealed similar effects in both types of child-to-parent violence and in both populations: a significantly positive, medium in magnitude mean true effect size. The theoretical and practical implications for measuring child-to-parent violence are discussed.

La violencia de los hijos hacia los padres y de los padres hacia los hijos: una revisión metaanalítica

RESUMEN

Con el propósito de examinar la literatura sobre la relación entre la violencia de hijos a padres y la violencia de padres a hijos, se diseñó una revisión metaanalítica con 26 tamaños del efecto que evalúan la relación de la violencia entre hijos y padres y padres e hijos en 19 estudios principales. Se calcularon y corrigieron los tamaños del efecto correlacional para el error de muestreo y la predicción y la fiabilidad del criterio. Los resultados mostraron una magnitud media significativamente positiva ($\rho = .36$), que significa el tamaño verdadero del efecto para la relación entre la violencia de hijos a padres y la violencia de padres a hijos. Se encontraron resultados similares para la victimización directa e indirecta. La probabilidad de desarrollar violencia de hijos a padres para los niños victimizados por los padres aumentó 71% en comparación con los niños no victimizados. El tipo de violencia del niño hacia el padre (física o psicológica) y la población (judicial o comunitaria) se analizaron como moderadores. Los resultados revelaron efectos similares en ambos tipos de violencia entre padres e hijos en ambas poblaciones: un nivel de efecto medio significativamente positivo, de magnitud media. Se discuten las implicaciones teóricas y prácticas para medir la violencia de los hijos hacia sus padres.

Child-to-parent violence has received little attention in the scientific literature, but recently it has become the focus of scientific scrutiny owing to the sudden increase in the recorded rates of this type of violence (Condry & Miles, 2014). Thus, the prevalence of child-to-parent violence (i.e., hitting either parent) in the USA for a 3-year period ranged from 6.5 to 10.8% (Peek, Fisher, & Kidwell, 1985); in Canada for a 6-month period the prevalence rate ranged from 12% to 60% for physical aggression and verbal aggression, respectively (Pagani et al., 2004, 2009); in Spain, where most field studies have been performed (Moulds & Day, 2017), the prevalence rate ranged

from 21% for physical violence and psychological abuse to 46% for emotional abuse (Jaureguizar & Ibabe, 2013). In contrast, other studies in Canada and France found much lower prevalence rates of around 0.6% (DeKeseredy, 1993; Laurent & Derry, 1999). Moreover, prevalence is influenced by sociodemographic variables, economic status, child and parent gender, and family structure (Agnew & Huguley, 1989; Nowakowski-Sims & Rowe, 2015; Peek et al., 1985). The discrepancies in the results of prevalence rates are in all probability due to different definitions of child-to-parent violence, which in turn entail variations in measures and measurement instruments.

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Hence, an array of definitions may be found in the literature from those restricted to physically violent behaviour or threats (Agnew & Huguley, 1989; Foo & Margolin, 1995; Gelles & Straus, 1979; Harbin & Madde, 1979; Kratcoski, 1985; Peek et al., 1985) to others including psychological violence and financial abuse (Calvete, Orue, Gámez-Guadix, & Bushman, 2015; Haw, 2010; Jaureguizar, Ibabe, & Straus, 2013; Kethineni, 2004); other definitions require only one incidence (Cottrell & Monk, 2004; Moral, García, Cuetos, & Sirvent, 2017), but others entail reiteration (Holt, 2013); yet other definitions require intent to cause injury (with the exclusion of pathologies, illegal substance abuse, homicide, or attempted homicide, without a previous history of violence), but other definitions do not (Cottrell, 2001; Harbin & Madden, 1979; Holt, 2013; Laurent & Derry, 1999; Loinaz, Andrés-Pueyo, & Pereira, 2017). Similarly, there is a broad spectrum of measurement instruments for evaluating child-to-parent violence. Thus, the Conflict Tactics Scale-Parent Child (Straus & Fauchier, 2008) measures verbal violence (psychological) in terms of shouting, insults and threats to parents, and physical violence as hitting, punching, kicking, whereas the Within-Family Violence Scale (Ibabe & Jaureguizar, 2011) measures physical violence, as hitting parents and psychological through insults, threats, or blackmail (the latter is referred to as emotional abuse, which is a form of psychological abuse) and in the Adolescent Child-to-Parent Aggression Questionnaire (Calvete et al., 2013) pushing, punching or kicking parents constitutes physical violence, shouting, insulting, blackmailing, annoying, and disobeying are forms of psychological violence, and taking money without permission is an example of financial abuse. Paradoxically, none of these instruments evaluate reiteration, which is particularly crucial in psychological violence – the intent to cause injury, nor the injury caused (Arce, Fariña, & Vilariño, 2015). As for the mandatory application of the United Nations' (1985) definition of victim (child-to-parent violence implies the existence of a victim, parent or guardian), "victims means persons who, individually or collectively, have suffered harm, including physical or mental injury, emotional suffering, economic loss or substantial impairment of their fundamental rights". In short, without a victim there is no child-to-parent violence, and for it to occur there must be physical or psychological (mental injury, emotional suffering) injury, financial abuse, or impairment of fundamental human rights. Thus, if a behaviour is to constitute child-to-parent violence it must cause injury (victimization) by definition. Identifying injury is not problematic when dealing with physical violence (e.g., kicks, punches, blows), but psychological violence, including emotional abuse, is subject to interpretation. Disobedience, shouting, insulting, or blackmailing do not inevitably cause injury – this would imply if there is no victim there is no child-to-parent psychological violence.

In addition, the fact that research was initially focused on physical child-to-parent violence (Agnew & Huguley, 1989; Foo & Margolin, 1995; Kratcoski, 1985; Peek et al., 1985), and subsequently included psychological violence (Calvete, Orue, Gámez-Guadix, del Hoyo-Bilbao, & López de Arroyabe, 2015; Haw, 2010; Jaureguizar et al., 2013; Kethineni, 2004), and that measurement instruments do not evaluate the same content would explain the inconsistencies in prevalence data found in the literature.

Furthermore, self-reported child-to-parent violence prevalence rates are underestimated due to a systematic measurement error. Succinctly, self-reports minimize violence (dark delinquency), and victimization (unreported victimization) (Condry & Miles, 2014). The reasoning underlying both sources of error vary from fear of reporting, feelings of guilt, and defensiveness – which account for the underreported response bias (Arce, Fariña, Seijo, & Novo, 2015; Harbin & Madden, 1979).

As for the rates of parent-to-child violence, between 10 and 20% of children are exposed to intimate partner violence (i.e., vicarious victimization) and between 1.5% and 16% to child maltreatment (i.e., direct victimization) mainly (> 80%) perpetrated by parents or caregivers (Gilbert, Kemp et al., 2009; Gilbert, Widom et al., 2009; Seijo, Fariña, Corras, Novo, & Arce, 2016). Similarly than for child-to-parent violence, the large diversity in prevalence is mediated by the definition of violence against children (e.g., maltreatment, physical abuse, neglect, emotional abuse), the data source (e.g., official statistics, community studies), and the measurement of child maltreatment.

In theoretical terms, the social learning theory (Bandura & Walters, 1959, 1963) purports to explain child-to-parent violence (Rybski, 1998). According to this theory, the violent behaviour employed by parents in their relationships between themselves (vicarious victimization), and with their children (direct victimization) serve as a model that children learn by modelling it (Cottrell & Monk, 2004; Ulman & Straus, 2003). Two complementary explanatory models (see Figure 1) have been proposed to explain the relation between parent-to-child and child-to-parent aggression through time (Brezina, 1999). In model 1, parent-to-child aggression predicts child-to-parent aggression, and subsequently child-to-parent aggression inhibits parent-to-child aggression. There is no reciprocity, but compensation (lagged effects). Model 2 predicts reciprocal effects (simultaneous or close in time) between parent-to-child and child-to-parent violence (bidirectional violence). Though the social learning theory and the models have received broad support, results contrary to the models have been found (Robinson, Davidson, & Drobot, 2004).

As for the moderators of the relationship between parent-to-child and child-to-parent violence, both child victimization types

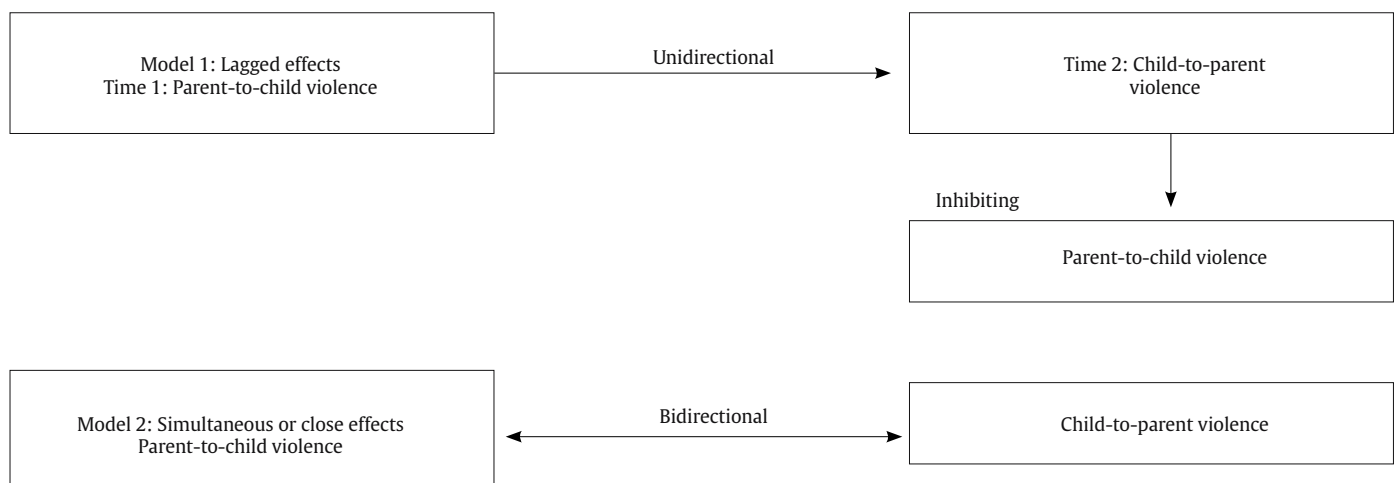


Figure 1. Explaining Models of the Relation between Parent-to-child and Child-to-parent Violence through Time.

(direct and vicarious) and the child-to-parent violence type (physical, psychological, financial) have been assessed. Both the direct type of child victimization, (Calvete, Orue, & Sampedro, 2011; Gámez-Guadix & Calvete, 2012; Hartz, 1995; Ibabe, 2015; Kennedy, Edmonds, Dann, & Burnett, 2010; Kratcoski, 1985; Maxwell & Maxwell, 2003; Meredith, Abbot, & Adams, 1986; Ulman & Straus, 2003) and the vicarious type (Calvete et al., 2011; Carlson, 1990; Gámez-Guadix & Calvete, 2012; Ibabe, 2015; Kennedy et al., 2010; Livingston 1986; Ulman & Straus, 2003) are believed to raise the likelihood of exhibiting child-to-parent violence. Likewise, the relationship between child-to-parent violence type with victimization from parents has also been studied, showing that victimized children exercised both types of violence on parents (Calvete et al., 2011; Gámez-Guadix & Calvete, 2012; Lyons, Bell, Frechette, & Romano, 2015; Margolin & Baucom, 2014). Similar results were found with community (Gámez-Guadix & Calvete, 2012; Ibabe, 2015; Margolin & Baucom, 2014) and judicial (Contreras & Cano, 2014, 2016; Kennedy et al., 2010) populations.

Bearing these findings in mind, the aim of this study was to perform a meta-analytical review in order to examine if parent-to-child violence predicts child-to-parent violence; to assess the effects of the moderators analysed in the literature, and the consistency in the results between populations (community and judicial); to compare the empirical support underlying the explanatory models; to quantify the incremental probability of exhibiting child-to-parent violence linked to parent-to-child violence; to study the incremental validity between predictors; and to quantify the classification rates of the child-to-parent violence measurement instruments.

Method

Literature Search

An exhaustive search of the scientific literature was performed based on a multimethod approach involving 4 different meta-search strategies: Google Scholar, PsycInfo Web of Science and Scopus scientific databases, and Dialnet, TESEO, and Psycodoc bibliographic portals, as well as the bibliographic references of the papers selected in the present study.

The electronic search keywords were generated through a system of successive approximations by adding the following relevant keywords included in the selected papers: “child-to-parent violence”, “violence against parents”, “parent abuse”, “family violence”, “intrafamily violence”, “parent-to-child violence”, “domestic violence”.

Inclusion and Exclusion Criteria

Bearing the aims of this meta-analysis in mind, the inclusion criteria for the primary studies of the meta-analysis were that they: (1) included data on any type of victimization, and a measure of child-to-parent violence and (2) provided statistics for calculating the effect sizes (means, standard deviation, standard error), or other statistics that could be converted to effect sizes. In cases where critical data for computing the effect size was lacking, the authors were contacted for relevant information.

Thus, 23 primary studies fulfilled the inclusion criteria, of which 4 were subsequently eliminated owing to the impossibility of determining the effect size and 3 due to data duplication. From the remaining 19 studies, a total of 26 effect sizes were obtained for the analysis of the relation between child-to-parent and parent-to-child violence; effect sizes for moderators ranged from 6 to 18. The study search flowchart is shown in Figure 2.

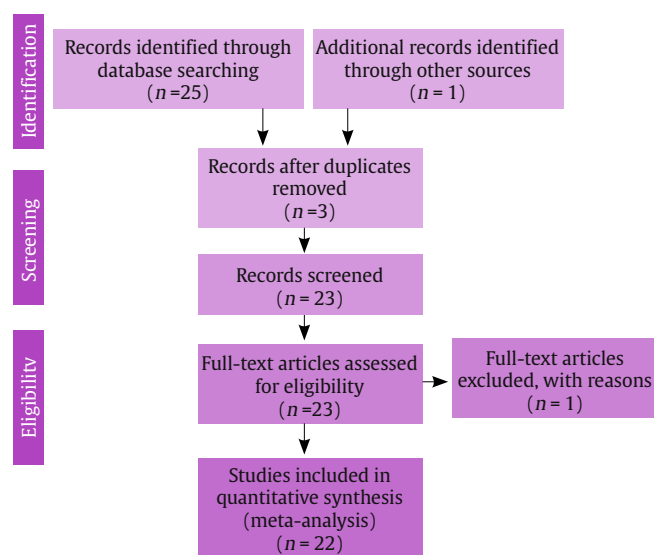


Figure 2. Flow Diagram of the Meta-analysis.

Coding

The selected papers were coded (see Appendix) according to the following information: (a) reference of the paper, (b) sample size, (c) effect size, and (d) reliability of the measurement instruments employed. The next step was to search for moderating variables, each independently evaluated to obtain inter-rater agreement ($\kappa = 1$) for the type of violence exhibited (child-to-parent physical and psychological violence, with emotional abuse included in the latter category), for the sample (community and judicial populations), and for the types of victimization (direct and vicarious).

Data Analysis

The effect sizes were taken directly from the primary (correlational) studies when correlations (r) were provided. For the experimental studies, Hedges and Olkin's (1985) δ was computed, as derived from the procedure of Kraemer and Andrews (1982). The δ was computed contrasting the observed proportion in the study (child-to-parent violence) with a test value. For the test value, the weighted mean proportion of the sample size of registered cases of child-to-parent violence were computed (i.e., the probability of child-to-parent violence in children that were not the target of parent-to-child victimization) in the control groups of the experimental studies. Thus, the effect size was estimated by the difference of the inverse of the normal cumulative distribution function, Φ^{-1} , being δ the difference of the inverse function of the observed probability of child-to-parent violence in the experimental group minus the test value, $\delta_1 = \Phi^{-1}(\hat{p}_1^E) - \Phi^{-1}(\hat{p}_1^C)$. Then, δ values were transformed into correlations by the formula $\frac{\sqrt{\delta^2}}{4 + \delta^2}$.

A random effect psychometric correlational meta-analysis was performed on the effects sizes of the primary studies, in line with Schmidt and Hunter's (2015) procedure, where the observed effect sizes were, at a first step, corrected by sampling error (r_w), i.e., weighting effect size by sample size – bare-born procedure –, and, at a second step, they were corrected for predictor and criterion unreliability (r), i.e., by the measurement error in X and Y [$r_{cxy} = r / \sqrt{(r_{yy} * r_{xx})}$]. As for the study of moderators of the observed relationship between predictor and criterion, the decision rule applied was derived from the amount of error variance explained by the artifactual variance. According to this rule, if artifactual variance (i.e., sampling error, measurement error, and range restriction) accounts for most of the

Table 1. Results of the Correlational Meta-analyses for Parent-to-child Violence and Child-to-parent Violence

	<i>k</i>	<i>N</i>	r_w	SD_r	ρ	SD_p	%Var	95% Cl ρ	80% Cl ρ
Parent-to-child violence	26	9521	.28	.1189	.36	.1378	18.48	.30, .42	.18, .54
Direct	14	6406	.31	.1100	.41	.1299	20.02	.33, .49	.24, .58
Vicarious	14	5983	.27	.1133	.37	.1408	16.68	.29, .45	.19, .55

Note. *k* = number of independent samples; *N* = total sample size; r_w = sample size weighted mean observed correlation; SD_r = sample size weighted observed standard deviation of correlations; ρ = mean true score correlation; %Var = percent variance of observed correlations attributable to statistical artifacts; 95% Cl ρ = lower and upper limits of the 95% confidence interval for the mean true score correlation; 80% Cl ρ = lower and upper limits of the 80% credibility interval.

sample variance, it would appear that the remaining unexplained variance is not systematic. About this, Schmidt and Hunter (1981) found that artifacts account, on average, for 72% of the error variance, with a 75% decision rule; i.e., if the artifacts explain less than 75% of the variance, then moderators are present. In the present meta-analysis, this decision rule may fall slightly as range restriction was not corrected (range restriction and measurement error together accounted for around 15% of the variance).

In this research setting, Cohen's *U*, BESD (binomial effect size display), PS (probability of superiority), and Cohen's *q* (difference between two correlations) statistics proved to be useful for completing the results of the meta-analysis, and bestowing practical value to the results (Amado, Arce, Fariña, & Vilariño, 2016; Amado, Arce, & Herraiz, 2015; Fariña, Redondo, Seijo, Novo, & Arce, 2017). As treatment efficacy was not examined in the design of the primary studies, BESD was substituted by the forecasting index. From this, the incremental validity between two predictors (proportion of improvement in the prediction of the larger over the lower), the difference between the indexes of forecasting (Guilford & Fruchter, 1978), $E_1 - E_2$, was computed.

Predictor and Criterion Reliability

Not all of the primary studies reported the reliability of the measurement instruments used for measuring victimization (predictor), such as child-to-parent violence (criterion). In studies where reliability was not reported, reliability of the original instrument was used. Moreover, the average reliability for the studies was computed using several measurements from different instruments for the same variable (i.e., parent-to-child violence and child-to-parent violence). In these case, where criterion or predictor reliability was not available, correction for attenuation was computed by means of an artifact distribution (Schmidt & Hunter, 2015).

Results

Study of Outliers

Prior to calculating the meta-analysis itself, outlier values in the general meta-analysis were analysed, that is, the magnitude of the association between child-to-parent violence and victimization, in order to identify extreme outlier studies, being careful not to eliminate moderators (Tukey, 1960). Thus, the criterion $\pm 1.5 * IQR$ was used to identify outlier values, and $\pm 3 * IQR$ to identify extreme values, but no extreme values nor outliers were observed.

Child-to-parent Violence Victimization Meta-analyses

The results of the child-to-parent violence meta-analysis (see Table 1) revealed a positive (between exposure to direct and vicarious violence during childhood and the development of violent behaviour towards parents), significant (the confidence interval had no value 0), and of a medium magnitude ($\rho = .36$) mean true (i.e., corrected for criterion and predictor unreliability) effect size (ρ), explaining 13.0%

of the variance. The results are generalizable to 90% of any other sample (credibility interval had no value 0) with a lower effect size (lower limit of the interval) of .18 (between small, .10 and medium, .30). Moreover, parentally victimized children had 71% more probability (PS) of exercising child-to-parent violence as compared to children who had not suffered parent-to-child violence, there was no overlapping in 46% of the distribution area of the populations of child-to-parent violence and non-child-to-parent violence (U_1) – that is, they were totally independent violent behaviours exercised on parents –, and the correct classification of child aggressors (U_2) would be around 65% (15% higher than the random 50%), and 78% (28% higher than random) for non-aggressors (U_3). As the type of violence to which a child has been exposed (direct and vicarious) is said to moderate differences in child-to-parent violence (Calvete, Orue, Gámez-Guadix, del Hoyo-Bilbao et al., 2015; Ibabe, 2014), both types of violence were analysed independently. The same pattern of results (i.e., a positive, significant, generalizable, and of a medium magnitude mean true effect size) was observed in direct and vicarious victimization (see Table 1), explaining 16.8% and 13.7%, respectively, with a total independence between populations of 52% and 47%, a correct classification rate of 67% and 66% for aggressors, and 82% and 79% for non-aggressors, and with a higher probability of exercising violence towards parents of 74% and 71%, for direct and vicarious victimization, respectively. Similarly, the results are generalizable to 90% of other samples with a minimum effect size of .19 and .26 (between small and medium). Comparatively, child direct and vicarious victimization were equally related to child-to-parent violence, $q_s = .048$, *ns*, with an incremental validity ($E_1 - E_2$) in the prediction of direct child-to-parent violence victimization (over vicarious) of only 1.7%. Thus, direct and vicarious child victimization were equally related to child-to-parent violence.

Nevertheless, moderators mediated the effects (the percent variance of observed correlations attributed to artifactual errors was lower than 75%). Thus, the analysis of moderators is needed.

Study of Moderators

Child-to-parent violence type (i.e., physical and psychological) showed a positive, significant, and medium magnitude ($\rho = .31$ and .33 victimization of physical and psychological violence) mean true effect size (see Table 2), with victimization by parents explaining 9.6% and 10.9% of the variance, respectively. The results are generalizable to 90% of future samples with a minimum effect size of .19 and .26 (between small and medium). The probability that parent-to-child victimization (as compared to non-victims of parent-to-child violence) resulted in physical violence towards parents was 68%, and 69% for psychological violence, whereas the population areas of child aggressors and child non-aggressors was completely independent at 41% and 43%, respectively, for physical and psychological violence on parents; the correct classification of aggressors was 63% and 64%, and non-aggressors 74% and 76%. Likewise, the comparison of the effect size of the type of violence exercised on parents, physical or psychological, showed both types of violence were equally related, $q_s = .022$, *ns*, to parent-to-child violence, with a percentage increase in psychological violence towards parents (as compared to physical) of only 0.7%.

Table 2. Results of the Correlational Meta-analyses for the Child-to-parent Violence Type (Physical and Psychological)

Type of violence CV _p	<i>k</i>	<i>N</i>	<i>r_w</i>	<i>SD_r</i>	ρ	<i>SD</i> ρ	%Var	95% CI ρ	80%
Physical	6	4,618	.25	.0685	.31	.0847	20.02	.23, .39	.19, .41
Psychological	6	4,618	.25	.0623	.33	.0546	39.33	.27, .39	.26, .40

Note. *k* = number of independent samples; *N* = total sample size; *r_w* = sample size weighted mean observed correlation; *SD_r* = sample size weighted observed standard deviation of correlations; ρ = mean true score correlation; *SD* ρ = true score standard deviation; %Var = percent variance of observed correlations attributable to statistical artifacts; 95% CI ρ = lower and upper limits of the 95% confidence interval for the mean true score correlation; 80% CV ρ = lower and upper limits of the 80% credibility interval.

Notwithstanding, moderators mediated the effects (the percent variance of observed correlations attributed to artifactual errors was lower than 75%), meaning that moderators should be analysed. Nevertheless, both insufficient independent samples and the non-identification in studies of moderators which could moderate this relation did not facilitate the analysis of additional moderators.

The second moderator of the relationship between parent-to-child victimization and child-to-parent violence to be analysed was population (judicial and community) (Rosado, Rico, & Cantón-Cortés, 2017). The results of the meta-analyses (see Table 3) revealed a positive, significant, medium magnitude ($\rho = .36$ and $.42$ for community and judicial samples), and a mean true effect size (see Table 2), explaining 12.9% and 17.6% of the variance. The results are generalizable to 90% of other samples with a minimum effect size of .18 (between small and medium), and .30 (medium) effect size for the community and judicial populations, respectively. As for the probability of superiority, children from the community population who suffered parental violence had a probability of parent victimization of 71%, and of 74% for judicial children. The independence of the areas was 46% and 54% for the community and judicial population, respectively, and the correct classification of aggressors was 65% and 68%, and non-aggressors 78% and 82%. The comparison between both populations in the magnitude of the relation between victimization and child-to-parent violence showed an equally intense relation, $q_c = .071$, *ns*, with the percentage increase in the prediction of child-to-parent violence in the judicial population (as compared to the community population) of 2.5%.

Discussion

The following conclusions may be drawn from the results of the meta-analysis:

1. A child's exposure to parental violence was a significant predictor of child-to-parent violence. Moreover, evidence that there are no inconvenient studies (contrary to the hypothesis), and that the results can be generalized to other samples (90% of the studies on the same population found an effect size equal to or larger than an *r* of .18), confers the status of fact (Popper, 1961) to the hypothesis that parent-to-child violence predicts child-to-parent violence. As for the explanatory models derived from social learning theory, the experimental designs employed in studies were limited to examining if parent-to-child violence predicted child-to-parent violence (lagged effects), giving support to the compensation model. No study tested the bidirectional model. In other words, the results supported that child-to-

parent violence is a consequence of parent-to-child violence (compensation). What remains to be determined is if reciprocal effects (simultaneous or close in time) may also explain the relationship between child-to-parent and parent-to-child violence (bidirectional). Future research should examine if violence between parents and children is indeed bidirectional, i.e., two-way.

2. As for the practical implications, the probability of exercising child-to-parent violence in victims of parent-to-child violence was around 70% above baseline (non-parent-to-child violence victims) under different conditions (population, type of violence, and type of victimization). Consequently, parent-to-child violence triggered a child-to-parent violence response around 70%.
3. As for practice too, the results of the meta-analyses exhibited that parent-to-child victimization classified correctly slightly less than 50% of the children into child-to-parent offenders and non-child-to-parent offenders, being approximately the double ($OR \approx 2$) for non-child-to-parent offenders (ranging over chance, i.e., 50%, from 24% to 32%) than for child-to-parent offenders (ranging from 13% to 18%). Thus, non-parent-to-child violence was a better predictor of non-child-to-parent violence than parent-to-child violence of child-to-parent violence.
4. Slightly under 50% of the population of children (total independence of the distribution of populations of aggressors and non-aggressors) were classified with the measurements of the studies (i.e., on a continuum, not in binary categories) as genuine child-to-parent aggressors and child-to-parent non-aggressors. Contrary, slightly more than 50% of the child population may not be classified as parent offenders or non-parent offenders. This means that the actual measurement does not discriminate effectively between these two populations. In short, young offenders and non-offenders share behaviours that measurement instruments assess as violence towards their parents. Thus, future research must be designed to measure both groups independently.
5. The results of the meta-analysis support that both direct victimization of children and the exposure to vicarious violence were significant and robust predictors (i.e., medium magnitude effect size and generalizable to additional samples) of child-to-parent violence. Moreover, the predictive value of both factors of child-to-parent violence was similar, with an increase in predictive validity of the highest predictor (direct victimization), and the lowest (vicarious victimization), which was practically negligible (1.7%). Nonetheless, data from

Table 3. Results of the Correlational Meta-analyses for the Population Type (Community and Judicial)

Population CV _p	<i>k</i>	<i>N</i>	<i>r_w</i>	<i>SD_r</i>	ρ	<i>SD</i> ρ	%Var	95% CI ρ	80%
Community	18	8,969	.28	.1190	.36	.1424	13.87	.29, .43	.18, .54
Judicial	9	859	.39	.1223	.42	.0900	51.71	.33, .51	.30, .53

Note. *k* = number of independent samples; *N* = total sample size; *r_w* = sample size weighted mean observed correlation; *SD_r* = sample size weighted observed standard deviation of correlations; ρ = mean true score correlation; *SD* ρ = true score standard deviation; %Var = percent variance of observed correlations attributable.

primary studies are systematically influenced by method bias leading to misleading conclusions. Concretely, method biases observed in the primary studies included common source effects (e.g., consistency motif, social desirability), item characteristic effects (e.g., item social desirability), item content effects (e.g., intermixing of items and constructs), and measurement context effects (e.g., criterion and predictor measured at the same temporal point and with the same subjects) (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). These observed sources of method biases in primary studies indicate that variance may be attributed more to the measurement method than to the measured constructs (common method variance). In other words, the explained variance may rest more on method bias than on studies' measurement. Additionally, these method biases may provide alternative explanations for results. Thus, these measurement errors invalidate the conclusions from the meta-analysis as the measurements of the primary studies are contaminated by systematic measurement errors. A proposed remedy for this is Harman's one factor test. This solution was tested with the victimization predictor (see above). However, this statistical remedy is insufficient as main effects for direct, vicarious victimization and its interaction remain unknown. Thus, in order to determine the predictive value of direct and vicarious victimization and its interaction of child-to-parent violence, empirical designs should entail the creation of a factor with excluding groups of direct and vicarious victim children. This underscores that a rigid criterion (gold standard) to classify offenders and non-offenders should be defined.

6. Parent-to-child violence predicted significantly, with a medium effect size and generalizable to both psychological and physical child-to-parent violence. The predictive power was analogous for physical and psychological violence, and there was no incremental validity (0.7%) of the higher (psychological) over the lower (physical) predictor. The same sources of biases as for direct and vicarious victimization were pertinent for these results and conclusions. Thus, these results should be re-tested with the aforementioned empirical designs.
7. The results of the meta-analyses for the community and judicial populations show that parent-to-child violence predicted child-to-parent violence. This prediction was not only significant but of a medium to large effect size, and generalizable to the whole community and judicial populations. Unexpectedly, the mean predictive value was equal for both populations and there was no a relevant incremental validity (i.e., 2.5%) of the prediction in the judicial population (the judicial judgment serves as a gold standard to classify all them as authentic child-to-parent offenders; thus, it was expected that parent-to-child violence predicts higher child-to-parent violence in this population) over the community one. Searching for causes of this, significant differences, $q_s = .128$, $p < .01$, were found between the 80% lower limit of the credibility interval, but not for the upper limit, $q_s = .014$, *ns*. Nevertheless, the observed 80% lower limit of the credibility interval for the community population established a minimum predictive power of a small to medium effect size ($r = .18$). In other words, the measurement instruments used classified more than 90% of the children from the community as offenders. Undoubtedly, this implies method bias and requires the strict definition of the criteria (e.g., judicial judgment making) to correctly classify child-to-parent offenders in community population.

In conclusion, primary studies on the relationship between parent-to-child violence and child-to-parent violence entail certain limitations that should be borne in mind in further research. The

literature has focused exclusively on child victimization from parents as a predictor of child-to-parent violence and has overlooked the simultaneous analysis of both child-to-parent violence and parent-to-child violence, and child-to-parent violence as a predictor of parent-to-child violence (Bartle-Haring, Slesnick, & Carmona, 2015; Moylan et al., 2010). Thus, future research should focus on analysing simultaneously child-to-parent violence and parent-to-child violence, and child-to-parent violence as a predictor of parent-to-child violence. Measurement of child-to-parent violence and parent-to-child violence should be undertaken using other measurement instruments (Calvete, Gámez-Guadix, & Orue, 2014), with rigid and clearly defined criteria for classifying types of violence. Furthermore, all method biases observed in the literature (primary studies) should be controlled or mitigated in future research design. Finally, potential relevant moderators of the relationship between parent-to-child and child-to-parent violence, such as child gender or the predictive value of parent-to-child violence in other contexts such as dating violence, should be assessed (Stith et al., 2000). However, parent-to-child violence is a robust predictor of child-to-parent violence.

Conflict of Interest

The authors of this article declare no conflict of interest.

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- Asterisks refer to studies included in meta-analysis.*
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Appendix

Selected Papers Coding

Study	Population	N	Age	Gender	Parent-to-child violence (Meassure)	r _{xx}	Child-to-parent-violence (Meassure)	r _{xx}	Analysis
Kratcoski (1985)	Community	63	---	---	Ad hoc questionnaire	---	Ad hoc questionnaire	---	Proportions
Peek, Fisher, and Kidwell (1985)	Community	1429	---	M: 100%	Interview	---	Interview	---	Zero-order correlation
Livingston (1986)	Community	44	---	---	Ad hoc questionnaire	---	Ad hoc questionnaire	---	Proportions
Meredith, Abbot, and Adams (1986)	Community	304	---	F: 61% M: 39%	CTS Parent Satisfaction Scale Marital Satisfatoin Scale	.75 .81 .84	CTS	---	Correlational
Bonnie E. and Carlsson (1990)	Community/ clinical	66	Range: 13-18 M=15.41	M: 55% F: 45%	Ad hoc questionnaire	---	Ad hoc questionnaire	---	Proportions
Browne and Hamilton (1998)	Community	178	---	---	Childhood History Questionnaire	---	CTS	---	Proportions
Langhinrichsen-Rohling and Neiding (1995)	Judicial	474	M = 18	M: 71% F: 29%	CTS	.87	Modification of the CTS	---	Partial correlations
Ulman and Straus (2003)	Community	289 414	---	---	CTS	---	CTS	---	Proportions
Ibabe, Jaureguizar, and Díaz (2009)	Judicial	33	---	---	Judicial file analysis	---	Judicial file analysis	---	Proportions
Kennedy, Edmons, Dann, and Burnett (2010)	Judicial	100 100	M = 14.55 SD = 1.55	M: 74.9% F: 25.1%	Judicial file analysis/Interview	---	Judicial file analysis/ interview	---	Proportions
Rechea and Cuervo (2010)	Judicial	14	M = 15.58	M: 58.8% F: 41.2%	Ad hoc questionnaire	---	Ad hoc questionnaire	---	Proportions
Calvete, Orue, and Sampedro (2011)	Community	1427	Range: 12-17	M: 47.8% F: 52.2%	Direct victimization: DDI Vicarious victimization: EEVF	.87 .85	CTS-CP: Physical CTS-CP: Verbal CTS-CP: Global	.88 .61 .69	Correlational
Gámez-Guadix and Calvete (2012)	Community	1681	M = 20.75	M: 22.5% F: 76.9%	Direct victimization: CTS-PC/DDI Vicarious victimization: CTS2	.82/.83 .73	Child-to-parent Violence Scale: Verbal Child-to-parent Violence Scale: Physical Escala de violencia intra-familiar	.79 .74 .80	Correlational
Ibabe (2014)	Community	485	M = 15 SD = 1.69	M: 55% F: 45%	EVI	.79	Adolescents' parent-direct- ed aggression	.75	Correlational
Margolin and Baucom (2014)	Community	75	---	---	CTS	.72	Judicial file analysis	---	Proportions
Contreras and Cano (2014)	Judicial	48 42	---	---	Judicial file analysis	---	Judicial file analysis	---	Proportions
Calvete, Orue, Gámez-Guadix, Hoyo-Bilbao, and López de Arroyabe (2015)	Judicial	15	M = 16 SD = 1.33	M: 66.6% F: 33.4%	Structured interviews to young- sters and parents	---	Structured interviews to youngsters and parents	---	Proportions
Calvete, Orue, Gámez-Guadix, and Bushman (2015)	Community	591	M = 14.7 SD = 1.11	M: 49.6% F: 50.4%	Exposure to Violence Scale	.80	Child-to-parent Aggression Questionnaire	.83	Correlational
Lyon, Bell, Frechette, and Romano (2015)	Community	365	Range: 18-24	M: 24.2% F: 75.8%	Direct victimization: spanking, psychological aggression, physical abuse. Vicarious victimization: CTS2	.75 .88	CTSPC-Child-to-parent	.64	Correlational
Ibabe (2015)	Community	585	Range: 12-18	M: 48% F: 52%	Direct victimization: physical/ psychological punishment Vicarious victimization: CTS2	.86 .85	CTS1: Physical CTS1: Psychological	.78 .85	Correlational
Izaguirre and Calvete (2017)	Community	606	M = 15.89 SD = 0.84	M: 48.5% F: 47.1% Missing 4.4%	Exposure to Violence Question- naire (direct & vicarious)	.76 .82	Child-to-parent Aggression Questionnaire	.635	Correlational
Contreras and Cano (2016)	Judicial	30	M = 16.30 SD = 1.34	M: 66.7% F: 33.3%	Exposure to Violence Scale	.88 .86	Judicial file analysis	---	Proportions

