

Dating violence (DV): a systematic meta-analysis review

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Título: La violencia en el noviazgo (VN): una revisión de meta-análisis.

Resumen: Esta revisión bibliográfica sintetiza los resultados de estudios meta analíticos sobre factores de riesgo y protección asociados a la Violencia en el Noviazgo (VN). Se incluyeron 15 meta-análisis publicados entre 1997-2018, $N = 1784018$, y se clasificaron según el modelo socio-ecológico. Se calcularon las Zr media para cada variable y nivel, incluyendo las diferencias en los tamaños del efecto medio entre victimización y perpetración de VN y, posteriormente, se transformaron a r . Se encontró que los factores de riesgo con mayor peso asociados a VN, según nivel, fueron: (1) individual: consumo de tabaco y embarazo precoz (victimización) y sexo (perpetración/victimización); (2) microsistema: acoso sexual de pares (victimización), VN de los pares, tener amigos con conductas problemáticas y sufrir violencia en familia de origen (perpetración/victimización); (3) exosistema: edad (victimización) y barrio (perpetración/victimización) y (4) macrosistema: minoría cultural y desventaja económica (perpetración/victimización). Factores protectores de VN fueron: apoyo social de pares y parentalidad positiva, pero con menos peso. El tamaño del efecto fue mayor para las variables de nivel exo, frente a las macro, individual y micro respectivamente. Hay diferencias entre los tamaños del efecto totales, siendo en el exosistema mayor en victimización que en perpetración. Delimitar los factores de riesgo y protección con mayor efecto sobre VN resulta fundamental para prevenir este problema.

Palabras clave: Violencia en el Noviazgo; Revisión de meta análisis; Modelo socio-ecológico; Factores de riesgo y protectores.

Abstract: This study summarizes the results of meta-analyses about risk and protective factors related to dating violence (DV). Fifteen studies were included from 1997 to 2018, $N = 1784018$. The results were classified according to ecological theory. The Zr 's were calculated for each factor and level of analysis, including the differences between victimization and perpetration effect sizes. Then, the Zr 's were transformed to r values. In accordance with the different levels of analysis, results showed that the effect sizes were greater for: (1) individual level: cigarette smoking, adolescent pregnancy (victimization) and sex (perpetration/victimization); (2) microsystem: peer sexual harassment, (victimization), peer DV, deviant peers and family violence (perpetration/ victimization); (3) exosystem: age (victimization) and violent neighborhoods (perpetration/ victimization), and (4) macrosystem: cultural minority and disadvantaged neighborhoods (perpetration / victimization). DV protective factors which had the lowest effect sizes were: parental and peer support; and highest effect sizes were found in the exo and macro levels, and then in the individual and micro levels. Furthermore, statistically significant differences between total effect sizes were found, with values being higher in the exosystem for victimization than for perpetration. Delimiting the most important risk and protective factors for DV has important implications for prevention and intervention.

Keywords: Dating violence; Meta- review; Social-ecological model; Risk and protective factors.

Introduction

Dating violence (DV) is a widespread problem during adolescence (Wincentak, Conolly & Card, 2016) which involves intentional sexual, physical or psychological acts or abuse by one member of a dating couple towards the other (Jennings et al., 2017; Public Health Agency of Canada, 2012). DV occurs within the context of an intimate romantic and/or sexual relationship between young people, with differing degrees of formality (Vagi et al., 2013), who do not live together and have neither children nor any binding legal or economic ties (Shorey, Cornelius & Bell, 2008; Viejo, 2014).

According to a systematic review carried out by Jennings et al. (2017), the prevalence rate of DV is between 6% and 21% among men, and between 9% and 37% among women. However, the study did not analyze differences between the two sexes as regards perpetration and victimization. Other international studies have found similar prevalence rates for physical DV, reporting that between 10% and 25% of both men and women have suffered this kind of violence (Viejo,

Monks, Sánchez & Ortega-Ruiz, 2016; Wincentak et al., 2016). Studies measuring both sexual and physical violence have found that 1 out of every 5 adolescents (18%-20%) claim to have been subjected to DV by their partner (Silverman, Raj, Mucci & Hathaway, 2001). International studies measuring only sexual violence report prevalence rates among women of between 9% and 13% (Kliem, Baier & Bergmann, 2018; Lau, Nguyen & Markham, 2018). In general, psychological DV rates are higher than those for physical violence, although studies report varying results, with rates ranging between 30% and 92% (Fernández-González, O'Leary & Muñoz-Rivas, 2014; Orpinas, Hsieh, Song, Holland & Nahapetyan, 2013; Ybarra, Espelage, Langhinrichsen-Rohling & Korchmaros, 2016).

In Spain, the prevalence of DV among the youth population has risen ($n = 5634$) (Ministry of Health, Social Services and Equality, 2015). According to the Macro-survey of Violence Against Women carried out in 2015, 11.7% of female adolescents and young women claim to have been victims of physical or sexual violence (Hernández Oliver & Doménech del Río, 2017). Some authors have linked DV to violence suffered by women during adulthood. For example, studies carried out among the adult clinical population have found that intimate partner violence (IPV), perpetrated by men against women, had been present since courtship (Amor, Echeburúa, De Corral, Sarasua & Zubizarreta, 2001; Black et al., 2011).

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As regards the consequences of DV, female adolescent victims have been found to have lower self-esteem and a higher level of emotional dependency than non-victims (Moral, García, Cuetos & Sirvent, 2017). Other studies have found that DV is linked to adverse long-term health outcomes among women (Howard, Debnam & Wang, 2013). DV is associated with increased feelings of guilt, rage, pain and anxiety (Cornelius & Resseguie, 2007), as well as with other negative effects such as reduced psychosocial wellbeing and poor academic performance (Zaha, Helm, Baker & Hayes, 2013). Moreover, recent studies have also found that DV is linked to higher rates of suicidal ideation and depression (Singh et al., 2014; Silverman et al., 2001).

Many studies have attempted to identify the risk factors associated with DV victimization and perpetration and to develop prevention methods aimed at minimizing its consequences. Some of the individual factors that have been identified include low frustration tolerance, externalizing problems and sexism, all of which have been linked specifically to the perpetration of DV (Pazos, Oliva & Gómez, 2014). Alcohol misuse during adolescence and early sex initiation (age 12 to 14) predict DV perpetration among men (Niolon et al., 2015). As regards the interpersonal factors associated with DV, aggression in peer relations has been found to positively predict DV perpetration and victimization (Ellis, Chung-Hall & Dumas, 2013). Moreover, sexual abuse during childhood has been linked to both physical dating violence victimization and psychological violence perpetration (Cyr, McDuff & Wright, 2006). One of the most controversial sociodemographic factors associated with DV is sex differences in both perpetration and victimization rates (Muñoz-Rivas, González-Lozano, Fernández-González, Fernández Ramos & García Sánchez, 2015; Rubio-Garay, Carrasco, Amor & López-González, 2015). Most studies identify women as being more at risk of suffering severe violence at the hands of their intimate partners (Hirigoyen, 2005; Shorey et al., 2008), and female adolescents as being more at risk of suffering violence in general than their male counterparts (Reidy et al., 2016; Singh et al., 2014). Moreover, it has been found that, among women, when individual risk factors (being pregnant or having children, suffering from mental illness and being in trouble with the law) combine with contextual risk factors (living on the streets or being in care), the DV victimization (34%) and perpetration (45%) rates are higher than for the general population (Joly & Conolly, 2016). Nevertheless, other studies on DV have failed to find any significant sex differences in relation to victimization (Sebastián, Verdugo & Ortiz, 2014), and when higher levels of violence have been recorded among women, most studies conclude that the statistical magnitude of this difference is small. One possible explanation for this is that these studies do not take into account women's tendency to underestimate violence (Fernández-Fuertes & Fuertes, 2010; Pazos et al., 2014). According to Ferrer Pérez and Bosch Fiol (2005) and Bosch Fiol and Ferrer Pérez (2012, 2013), the bidirectional nature of DV suggested by some authors (Reidy et al., 2016; Viejo et al.,

2016) can be linked to biases in the instruments, which assume that intimate partner abuse occurs in equal and symmetrical conditions, disassociating it from the violence perpetrated in the social environment in which it takes place and ignoring the macro level of analysis, including gender inequality.

In over three decades of research into DV, the principal systematic reviews have identified between 20 and 50 variables associated with aggression and victimization (Jennings et al., 2017; Lewis & Fremouw 2001; Vagi et al., 2013; Vezina & Hebert, 2007), thus confirming the complex, multi-causal nature of the problem. Recent meta-analyses have summed up the most commonly-studied risk factors associated with DV (Hérbert et al., 2017; Park & Kim, 2018). Nevertheless, the results have never yet been integrated into a global, structured analysis model, as have those pertaining to intimate partner violence in adult couples (Puentes-Martínez, Ubillos-Landa, Echeburúa y Páez-Rovira, 2016).

From a theoretical perspective, Dutton (1995) proposes the social-ecological model as a means of understanding intimate partner violence within a system with different levels of analysis: ontogenetic, microsystem, exosystem and macrosystem. The ontogenetic level refers to each person's individual characteristics, attitudes, beliefs and behaviors. The microsystem level refers to the immediate environment in which the relationship takes place, i.e. the aspects or groups that influence the transmission of violence. The exosystem is made up of the formal and informal social structures that connect an individual to their family and broader context. And finally, the social or structural macrosystem encompasses the cultural values present in the region in which the couple lives, along with the political and economic landscape. Dutton (1995) explains that all of these factors combine to determine the likelihood of abuse taking place, although he also points out that no single factor is enough, or even necessary, to guarantee the occurrence of violence. Nevertheless, this author only applied the model to the analysis of the variables associated with aggression and violence among adult couples. Subsequently, Heise (1998) used the ecological model to conduct an analysis encompassing the gender perspective, taking into account also other risk factors linked to aggression and violence against women. Similarly, and again using the ecological model as their basis, other studies broadened the search for risk factors to include the field of violence victimization between intimate partners. The study by Stith, Smith, Penn, Ward & Tritt (2004) analyzed the factors associated with violence victimization among adult intimate partners, and that conducted by Vezina and Hebert (2007) explored those linked to DV victimization among young women. No new reviews were then carried out until 2016, when the most recent results regarding intimate partner violence were integrated systematically into the ecological model by Puentes-Martínez et al. (2016). However, although the social-ecological model has thus been confirmed as the most suitable model for analyzing intimate partner violence, there are as yet no applied models to de-

termine the relative weight of the factors associated with victimization and perpetration of DV among young people and adolescents.

In light of the above, the aim of this study was to conduct a bibliographic review and offer an updated synthesis of the results reported by meta-analyses regarding risk and protective factors for increasing of DV, in accordance with the proposed social-ecological model. A second aim was to draw comparisons between different analysis levels in order to determine the relative weight of each factor in relation to DV. Following the suggestions made in previous studies, different variable types and the perpetration and victimization dimensions were analyzed separately.

Method

First of all, a review was conducted of all available meta-analyses focusing on DV, in both Spanish and English, in accordance with the PRISMA model (Urrútia & Bonfill, 2010). The data search was carried out in the following databases: Web of Science, Scopus, Dialnet, PsycInfo and Google Scholar. The search chains in the English databases were constrained to the following terms, in relation to topic, abstract or title: *Dating violence and meta-analysis*, *Dating violence and meta-analytic*, *Teen Dating Violence and meta-analysis*, *Teen Dating*

Violence and meta-analytic, *Courtship and meta-analysis*, *Courtship and meta-analytic*, *Dating abuse and meta-analysis*, *Dating abuse and meta-analytic*. The same criterion was used for the search conducted in Spanish.

The review includes those studies that: a) were meta-analyses on DV; b) analyzed the relationship between DV and another variable; and c) featured quantitative measures of DV perpetration and/or victimization. After eliminating duplicates ($N = 93$), a total of 106 studies were identified. $N = 91$ were eliminated on the basis of the following criteria: a) they were meta-analyses which did not include DV samples (only married couples or cases of conjugal or domestic violence); b) they included DV and IPV samples together, with no separate analysis; c) they were meta-analyses aimed at analyzing the effectiveness of intervention programs; d) they were primary articles or systematic reviews of DV; or e) they were qualitative studies of DV. $N = 15$ studies were finally taken into account, all written in English (See Figure 1).

In this meta-analytical review, the variables associated with DV were grouped in accordance with the socio-ecological model (Dutton, 1995), with a distinction being made between victimization and perpetration. The individual variables are presented below, followed by the group, family and structural level ones.

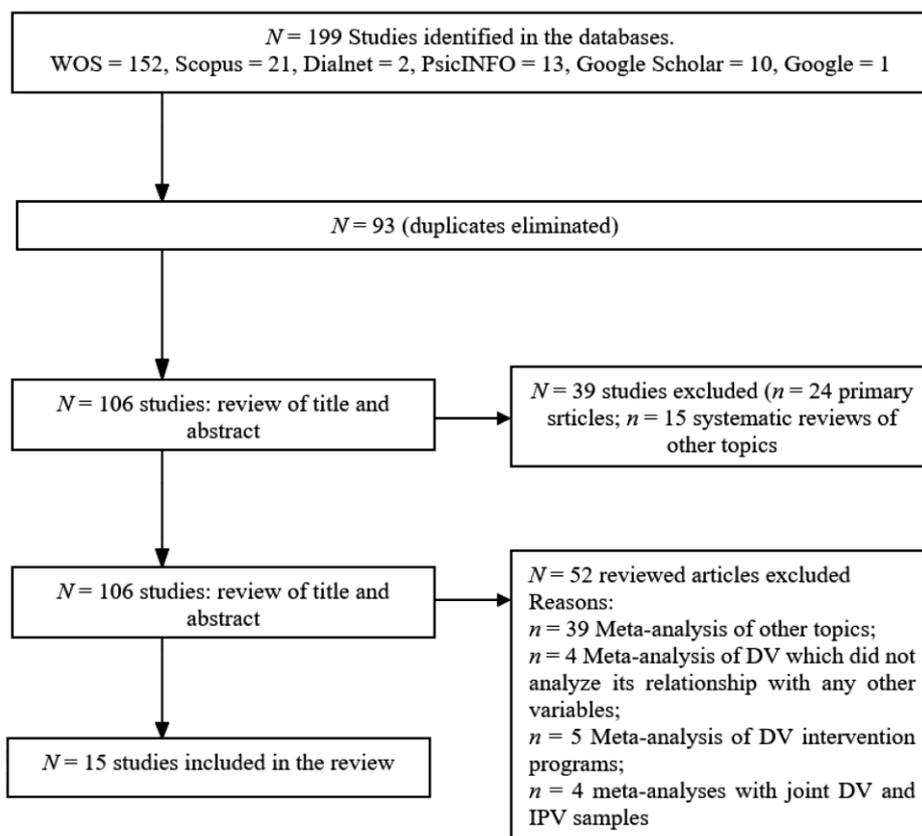


Figure 1. Flow chart: Identification phases and selection process (Urrútia & Bonfill, 2010).

Analysis

The principal results were taken into account for each meta-analysis, along with an effect size calculator (*d*, odds ratio, risk ratio, *B*, *r* and mean *r*). Within each meta-analysis, the statistics (Q_b) that evaluated the influence of potential risk factors on DV were obtained, along with those (Q_w) indicating the degree of heterogeneity within each risk factor category assessed. The confidence intervals (CI) were included, as were the sample size or total number of participants (*N*), and the number of studies included for each variable (*k*) (Johnson & Eagly, 2014).

Population parameters were estimated as Pearson's *r* correlations, both because they are easy to interpret and because conversion formulas are available for transforming other statistical tests (for example, *F*, *t*, chi-square) into *r* values (Rosenthal, 1984). *r* estimates are provided on the basis of the logit transformation (Borenstein, Hedges, Higgins & Rothstein, 2009). An Excel macro program (Wilson, 2016) designed specifically for use in meta-analyses was used for this purpose.

Whenever possible, the coefficients were converted to Fisher *Z(r)* values, which are deemed to be closer to normality. *Zr* values provide information about the mean magnitude of the effect size, in accordance with the size of the final sample included in each meta-analysis (most conservative method) (Field, 2001). In those cases in which the meta-analysis fails to specify the *N* of each primary study, the *Zr* estimate is calculated on the basis of the total *N* of the sample. Each *Z(r)* represents the effect size (*r*) weighted against the size of the sample, in accordance with the method recommended by Rosenthal (1984), taking the product of the *Z(r)* value and the appropriate degrees of freedom for each study. Studies were weighted in accordance with sample size

in order to place greater emphasis on those studies generating results from larger samples, which are assumed to be more representative of the population of interest. Subsequently, following the recommendations of Borenstein et al. (2009), to facilitate the interpretation of the results, each *Z(r)* was transformed into an *r*. Finally, comparisons were made between the mean *r*s found for each variable, between perpetration and victimization and in accordance with the proposed level-based category system (Cohen, Cohen, West & Aiken, 2003). In general, *r* values of around .10 are considered small, values of around .30 are considered medium and values of .50 and above are considered large (Cohen, 1988). In social psychology, the mean *r* value usually oscillates between .20 and .30 (Hemphill, 2003).

Results

The *K*=15 studies selected enabled the identification of 18 variables linked to DV, since some studies analyzed more than one variable at the same time. A total of 7 variables were found for the individual level (38.9%), 7 for the micro level (38.9%), 2 for the exo level (11.1%) and 2 for the macro level (11.1%). Despite including both IPV and DV samples, the meta-analyses by Devries (2013a & 2013b), Madigan, Wade, Tarabulsy, Jenkins and Shouldice, (2014), Moore et al. (2008) and Crane, Hawes and Weinberger (2013) nevertheless presented the results separately for each one, enabling us to extract the specific data pertaining to DV.

The results revealed 66 effect sizes, 41 referring to DV victimization (62.1%) and 25 referring to DV perpetration (37.9%). In specific terms, 18 effect sizes were identified for individual variables, (27.3%), 38 for variables linked to the family level (57.5%), 4 for contextual variables (6.1 %) and 6 for structural variables (9.1%).

Table 1. Risk factors associated with DV at the Ontogenetic (individual) level.

Study	<i>K</i>	<i>N</i>	Sample (<i>k</i>)	Empirical evidence ¹	Vict. <i>r</i>	Perp. <i>r</i>
Suicide attempt. Victimization: <i>N</i> = 26943, <i>Zr</i> = .15, CI [.14, .16], <i>r</i> = .15.						
Devries et al. (2013a)	16 LS	36163	Young M and W (aged 14-21). USA	Association between suicide attempts and victimization among women: <i>k</i> = 1 (<i>n</i> = 1659), β = .12, 95% CI [.02, .22]; <i>k</i> = 1 (<i>n</i> = 822), OR = 3.2, 95% CI [.97, 103.59].	.30	
Castellví et al. (2016)	29 LS	14373 0	M and W (aged 12-26). General population. USA	Victims of DV are more likely to attempt suicide in comparison with non-victims: <i>k</i> = 4 (<i>n</i> = 24462), OR = 1.65, 95% CI [1.40, 1.94].	.14	
Adolescent pregnancy. Victimization: <i>N</i> = 20892, <i>Zr</i> = .17, CI [.16, .18], <i>r</i> = .17.						
Madigan et al. (2014)	38 ² 10 DV	75390	Women aged 14 - 18 and over, pregnant before age 20. USA (25), Canada (3), New Zealand (3), Brazil (2), Ecuador (2), South Africa (1), Jamaica (1), El Salvador (1)	Adolescent pregnancy is associated with: Sexual abuse: <i>k</i> = 3 (<i>n</i> = 4744), total OR = 1.55, 95% CI [.88, 2.72]. 1st Study (<i>n</i> = 1977), OR = 1.20, 95% CI [.50, 2.98]; 2nd Study (<i>n</i> = 2186), OR = 2.90, 95% CI [1.44, 5.85]; 3rd Study (<i>n</i> = 581), OR = 1.17, 95% CI [.80, 1.71]. Physical abuse: <i>k</i> = 4 (<i>n</i> = 13579), total OR = 1.72, 95% CI [1.13, 2.62]. 1st Study (<i>n</i> = 1977), OR = 1.80, 95% CI [1.09, 2.97]; 2nd Study (<i>n</i> = 2186), OR = 2, 95% CI [1.19, 3.37]; 3rd Study (<i>n</i> = 328), OR = .96, 95% CI [.61, 1.52]; 4th Study (<i>n</i> = 9088), OR = 1.85, 95% CI [1.62, 2.11]. Adolescent pregnancy is associated with physical/sexual abuse: <i>k</i> = 3 (<i>n</i> = 2569), OR = 3.83, 95% CI [2.963, 4.97], Q_b = 1.08, ns.	.12	.15

Study	K	N	Sample (k)	Empirical evidence ¹	Vict. r	Perp. r
Alcohol misuse. Victimization: $N = 4679$, $Zr = .12$, CI [.09, .15], $r = .12$; Perpetration: $N = 44417$, $Zr = .13$, CI [.12, .14], $r = .13$; *Total: $N = 49096$, $Zr = .13$, CI [.12, .14], $r = .13$.						
Rothman et al. (2012)	16 ³ LS and CSS	44417	W and M (aged 11 - 21) USA, Mexico, Canada, South Africa, Russia and New Zealand.	The perpetration of DV is associated in M and W with: High alcohol consumption OR = 1.23, 95% CI [1.16, 1.31], $p = .0001$ Problematic alcohol consumption OR = 2.33, 95% CI [1.94, 2.80], $p = .0001$ Critical alcohol consumption OR = 1.47, 95% CI [1.17, 1.85], $p = .0001$.06	.23
Devries et al. (2013b)	55 LS	14603 1	W. USA.	$k = 2$ ($n = 3323$), DV victimization is positively associated with subsequent alcohol misuse: 1st Study ($n = 822$), OR = 1.26, 95% CI [.79, 2.01]; 2nd Study ($n = 2501$), OR = .98, 95% CI [.64, 1.48]. $k = 2$ ($n = 1356$) alcohol misuse is positively associated with subsequent DV victimization: 1st Study ($n = 1291$), OR = 1.19, 95% CI [.98, 1.46] $B = .17$ $p = .05$; 2nd Study ($n = 65$), OR = 3.94, $p = .04$.	.12	.11
Drug abuse. Victimization: $N = 23483$, $Zr = .12$, CI [.11, .13], $r = .12$; Perpetration: $N = 97356$, $Zr = .13$, CI [.12, .14], $r = .13$; *Total: $N = 120839$, $Zr = .13$, CI [.12, .14], $r = .13$.						
Moore et al. (2008)	96	80000	M and W (aged 15 and over). Community, clinical and mixed sample. Caucasian (43), Black (14), Hispanic (9), Native American and Asian (2), mixed and N/I (28)	Drug abuse is positively associated with DV perpetration: $k = 9$ ($n = 13189$), $d = .28$, 95% CI [.24, .31], $Q_w = 131.89$, $p < .001$.	.14	
Johnson et al. (2017).	13 LS CSS	38719	W and M (aged 11-27) USA	Marijuana use increases the likelihood of perpetrating physical DV by 45%: ($n = 17356$), OR = 1.45, 95% CI [1.20, 1.76], $p = .0001$. Marijuana use increases the likelihood of being a victim of physical DV by 54%: ($n = 23483$), OR = 1.54, 95% CI [1.22, 1.93].	.10	.12
Cigarette smoking. Victimization: $N = 271792$, $Zr = .20$, CI [.20, .21], $r = .20$.						
Crane et al. (2013)	31	27179 2	W. (Age N/I) Caucasian 48.7%, Latin American 5.1%, African American 17.9%, N/I 28.2%.	$k = 9$ ($n = N/I$). Association between DV victimization and smoking: $d = .41$, 95% CI [.26, .57], $p = .0001$.	.20	
Social desirability. Victimization: $N = 435$, $Zr = -.15$, CI [-.24, -.06], $r = -.15$.						
Sugarman & Hotaling (1997)	7	1964	W and M university students. USA. Caucasian and African American	Low Social Desirability is associated with higher DV reporting, $k = 1$ ($n = 435$).	.15	
Sex. Victimization: $N = 334339$, $Zr = .10$, CI [.10, .10], $r = .10$; Perpetration: $N = 334339$, $Zr = .21$, CI [.21, .21], $r = .21$; *Total: $N = 334339$, $Zr = .16$, CI [.16, .16], $r = .16$.						
Wincentak et al. (2016)	101 CSS	33433 9	M and W (aged 13-18).	Sex is associated with physical DV $k = 96$ ($n = 221221$). Perpetration of physical DV among women is higher (25%) than among men (13%). $k = 35$ ($n = N/I$) W and $k = 38$ M ($n = N/I$) OR = .51, 95% CI [.41, .63], $p = .0001$. No sex differences were found for physical DV victimization (21%) $k = 62$ ($n = N/I$) W and $k = 52$ M ($n = N/I$): OR = 1.18, 95% CI [.99, 1.40], $p = .06$. Sexual DV perpetration is higher among men (10%) than among women (3%). $k = 15$ M and $k = 13$ W ($n = N/I$), OR = 2.54, 95% CI [2.21, 2.92], $p = .0001$. Sexual DV victimization is higher among women: $k = 24$ W and $k = 17$ M ($n = N/I$), OR = .57, 95% CI [.41, .79], $p = .0001$.05	.18

DV= Dating violence; K= Number of studies, k=Subsample; LS= Longitudinal studies; CSS: Cross-sectional studies; N= Number of total sample; n= Number of subjects in the subsample; N/I=No information (the r was standardized in accordance with the sample total); W= Women; M= Men; r= Mean effect size; OR= Odds ratio; RR=Relative Risk; CI = Confidence Interval; Q_b = Heterogeneity between subgroups; Q_w = Heterogeneity within the subgroup; ns=Not significant. 95% CI for all values in the table. ¹The studies indicated correspond to the primary studies included in the meta-analysis. ²The total N of the study is 38 because it includes Intimate Partner Violence (IPV) and Dating Violence (DV) samples, the data described pertain only to DV studies. ³The authors only include k = 16 cross-sectional studies in the meta-analysis (18 effect sizes); the other longitudinal studies are not included due to their high degree of heterogeneity (total K = 28). *The total Ns were calculated by eliminating all duplicate values for victimization, perpetration and per variable.

At an individual level (see Table 1), two ($k = 2$) meta-analyses found a relationship between DV victimization and subsequent suicide attempts. Devries et al. (2013a) found a positive correlation between suffering from DV and suicide attempts among women, and Castellví et al. (2016) confirmed a higher risk of suicide attempts among young victims of DV (both male and female) than among those who had not been exposed to this type of violence.

One of the meta-analyses explored the relationship between being a victim of DV and adolescent pregnancy. Madigan et al. (2014) analyzed the association between adolescent pregnancy and history of abuse and mistreatment by a family member, partner (IPV) or date (DV) among adolescent and adult women pregnant before age 20. Adolescent pregnancy was found to significantly correlate with physical and sexual abuse, although not with emotional abuse. The concurrent effect of physical and sexual abuse is stronger than for any individual form of abuse, increasing the risk of adolescent pregnancy nearly fourfold.

Five ($k = 5$) of the meta-analyses explored the relationship between DV and substance abuse. In specific terms, $k = 2$ of the studies focused on alcohol misuse, one in relation to DV perpetration and the other in relation to DV victimization. Moreover, $k = 2$ studies analyzed the relationship between DV and drug abuse and $k = 1$ study focused on cigarette smoking. As regards alcohol misuse and DV perpetration, Rothman, McNaughton, Johnson & LaValley (2012) found that higher levels of alcohol misuse (in terms of both frequency and quantity of consumption, and in relation to problematic consumption and critical consumption episodes)

were positively associated with DV perpetration. Moreover, alcohol misuse among women was found to be positively associated with DV victimization (Devries et al., 2013b). In relation to drug abuse and DV, the meta-analysis conducted by Moore et al. (2008) found that this behavior was linked to higher levels of dating violence (DV), although a large degree of variability was also observed between the different studies analyzed. Johnson et al., (2017) found an association between marijuana use and physical dating violence perpetration and victimization. No significant differences were observed, however, between victimization and perpetration ($r_r - r_p = .01$, $Z = 1.37$, $p = .17$). Crane et al. (2013) analyzed the strength of the relationship between victimization and cigarette smoking, finding that DV victims are significantly more likely to smoke than non victims.

The meta-analytic review conducted by Sugarman and Hotaling (1997) analyzed social desirability (SD) and its relationship with DV, finding a significant effect of SD in DV. Specifically, higher DV reporting was found to be linked to lower SD scores.

Moreover, the meta-analysis by Wincentak et al. (2016) analyzed sex differences in this sense, finding that perpetration of physical violence was more prevalent among women than among men, although perpetration of sexual violence was more prevalent among men than among women. Sexual victimization was also found to be higher among women and perpetration (r_p) was more closely associated with sex than victimization (r_v) ($r_p - r_r = .11$, $Z = 46.13$, $p = .0001$). This study also analyzed macro variables, although these will be discussed later on.

Table 2. Risk factors associated with DV at the Microsystem level.

Study	K	N	Sample (k)	Empirical evidence ¹	Vict. r	Perp. r
Deviant peers (problematic/aggressive behavior) Victimization: $N = 22139$, $Zr = .26$, CI [.25, .27], $r = .25$; Perpetration: $N = 11997$, $Zr = .26$, CI [.21, .31], $r = .25$; *Total: $N = 31309$, $Zr = .26$, CI [.25, .27], $r = .25$.						
Garthe et al. (2016)	27	CSS 28491	M and W (aged 10-18). USA (15), Canada (10), Thailand (1) Brazil (1).	Aggressive and antisocial peer behavior is associated with victimization: $k = 5$ ($n = 1580$), $r = .28$, 95% CI [.20, .35], $p = .0001$ and perpetration: $k = 9$ ($n = 9170$), $r = .19$, 95% CI [.05, .32], $p = .0001$.	.28	.19
Hérbert et al. (2017)	87	278712	M and W ($M = 19$ years old). USA 72%, Canada 19%, Asia 9%	Having deviant peers $k = 14$ ($n = 17732$) is associated with victimization (psychological, physical and/or sexual) $r = .25$, 95% CI [0.85, 0.31], $p = .0001$.	.25	
Park & Kim (2018)	27	CSS LS 162724	M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Deviant peer behavior ($n = 2827$) is associated with victimization: $Zr = .26$, 95% CI [0.22, 0.30] and perpetration: $Zr = .45$, 95% CI [0.38, 0.52].	.26	.45
Peer support. Victimization: $N = 166651$, $Zr = -.13$, CI [-.13, -.13], $r = -.13$; Perpetration $N = 242$, $Zr = -.23$, CI [-.35, -.11], $r = -.23$; *Total $N = 166651$, $Zr = -.13$, CI [-.13, -.13], $r = -.13$.						
Hérbert et al. (2017)	87	278712	M and W ($M = 19$ years old). USA 72%, Canada 19%, Asia 9%	Greater peer support $k = 10$ ($n = 166409$) is associated with lower levels of DV victimization (psychological, threats, physical and/or sexual): $Zr = -.13$ CI [-0.21, -0.06], $p = .001$.	-.13	
Park & Kim (2018)	27	CSS LS 162724	M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Strong peer support and positive friendship ($n = 242$) is associated with low levels of DV victimization: $Zr = -.29$, 95% CI [-0.42, -0.17] and low levels of DV perpetration: $Zr = -.23$, 95% CI [0.38, -0.09]	-.29	-.23

Study	K	N	Sample (k)	Empirical evidence ¹	Vict. r	Perp. r	r
Bullying. Victimization: $N = 168428$, $Zr = .17$, CI [.17, .17], $r = .17$; Perpetration: $N = 112.940$, $Zr = .17$, CI [.17, .17], $r = .17$; *Total: $N = 168428$, $Zr = .17$, CI [.17, .17], $r = .17$.							
Garthe et al. (2016)	27	CSS 28491	M and W (aged 10-18). USA (15), Canada (10), Thailand (1) Brazil (1).	Being bullied by one's peers is associated with victimization: $k = 10$ ($n = 12223$), $r = .28$, 95% CI [.16, .40], $p = .0001$.	.22		
Hérbert et al. (2017)	87	278712	M and W ($M = 19$ years old). USA 72%, Canada 19%, Asia 9%	Bullying by peers: $k = 9$ ($n = 43265$) is associated with DV victimization (psychological, physical and sexual), $r = .18$, 95% CI [0.11, 0.26], $p = .0001$.	.18		
Park & Kim (2018)	27	CSS LS 162724	M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Being bullied or bullying others ($n = 112,940$) is associated with victimization: $Zr = .16$ CI [0.15, 0.16] and perpetration: $Zr = .17$ CI [0.15, 0.19] and	.16	.17	
Peer sexual harassment. Victimization: $N = 6835$, $Zr = .29$, CI [.27, .31], $r = .28$							
Hérbert et al. (2017)	87	278712	M and W ($M = 19$ years old) USA 72%, Canada 19%, Asia 9%	Peer sexual harassment: $k = 5$ ($n = 6835$) is associated with DV victimization (psychological, physical and/or sexual), $r = .29$, 95% CI [0.15, 0.43], $p = .0001$.	.29		
Peer dating violence. Victimization: $N = 2175$, $Zr = .28$, CI [.24, .32], $r = .27$; Perpetration: $N = 3900$, $Zr = .29$, CI [.26, .32], $r = .28$; *Total: $N = 6075$, $Zr = .29$, CI [.27, .31], $r = .28$.							
Garthe et al. (2016)	27	CSS 28491	M and W (aged 10-18). USA (15), Canada (10), Thailand (1) Brazil (1).	DV among one's friends and peer group is associated with DV victimization: $k = 8$ ($n = 2175$), $r = .28$, 95% CI [.24, .33], $p = .0001$ and DV perpetration: $k = 10$ ($n = 3900$), $r = .29$, 95% CI [.22, .37], $p = .0001$.	.28	.29	
Violence in family of origin. Victimization: $N = 461057$, $Zr = .16$, CI [.16, .16], $r = .16$; Perpetration: $N = 55963$, $Zr = .13$, CI [.13, .15], $r = .13$; *Total: $N = 461057$, $Zr = .16$, 95% CI [.16, .16], $r = .16$.							
Bradford (1999)	35	CSS 13115	M and W. $k = 25$ university students, $k = 5$ secondary school students, $k = 5$ Others	Violence in the family of origin (either witnessing or experiencing violence) is associated with DV victimization: $k = 17$ ($n = N/I$), $r = .12$, $p = .0001$, $Q_w = 91.560$, $p = .0001$ and perpetration: $k = 25$ ($n = N/I$), $r = .12$, $p = .0001$, $Q_w = 89.597$, $p = .0001$.	.12	.12	
Dee (2012)	24	LS 22953	M and W Secondary school and university students and the general population.	Child abuse increases the risk of being involved in DV as either a perpetrator: $k = N/I$, OR = 1.55, 95% CI [1.40, 1.71], $p = .001$ or a victim: $k = N/I$, OR = 1.72, 95% CI [1.53, 1.94], $p = .001$.	.15	.12	
Hérbert et al. (2017)	87	278712	M and W ($M = 19$ years old). USA 72%, Canada 19%, Asia 9%	Child sexual abuse: $k = 18$ ($n = 21825$) is associated with DV victimization (psychological, threats, physical and/or sexual), $r = .15$, 95% CI [0.12, 0.18], $p = .0001$. Psychological abuse in the family: $k = 11$ ($n = 9414$) is associated with DV victimization (psychological, threats, physical and/or sexual), $r = .14$, 95% CI [0.10, 0.17], $p = .0001$. Physical abuse in the family: $k = 27$ ($n = 112828$) is associated with DV victimization (psychological, threats, physical and/or sexual), $r = .14$, 95% CI [0.10, 0.18], $p = .0001$. General child abuse: $k = 58$ ($n = 148002$) is associated with DV victimization (psychological, threats, physical and/or sexual), $r = .17$, 95% CI [0.14, 0.20], $p = .0001$. Witnessing violence in the family of origin $k = 29$ ($n = 113025$) is associated with victimization (psychological, threats, physical and/or sexual) $r = .17$, 95% CI [0.14, 0.21], $p = .0001$.	.15	.14	.17
Park & Kim (2018)	27	162724	M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Witnessing IPV ($n = 527$) increases the risk of victimization: $Zr = .47$, 95% CI [0.35, 0.59] and perpetration: $Zr = -.25$, 95% CI [0.18, 0.31] Child abuse (physical or sexual) ($n = 19.368$) increases the risk of DV victimization: $Zr = .11$, 95% CI [0.08, 0.13] and perpetration $Zr = .1$, 95% CI [0.07, 0.19]	.47	.25	.11
Parenting. Victimization: $N = 116240$, $Zr = .12$, 95% CI [.12, .12], $r = .12$; Perpetration: $N = 17813$, $Zr = .19$, CI [.18, .20], $r = .19$; *Total: $N = 116240$, $Zr = .13$, CI [.12, .14], $r = .13$.							
Hérbert et al. (2017)	87	278712	M and W ($M = 19$ years old). USA 72%, Canada 19%, Asia 9%	Greater parental support $k = 15$ ($n = 89631$) is associated with lower levels of DV victimization (psychological, threats, physical and/or sexual): $Zr = -.10$, 95% CI [-0.16, -0.04], $p = .0001$.			-.10

Study	K	N	Sample (k)	Empirical evidence ¹	Vict. <i>r</i>	Perp. <i>r</i>
			Asia 9%	Greater parental control $k = 8$ ($n = 8796$) is associated with lower levels of DV victimization (psychological, threats, physical and/or sexual): $Zr = -.12$, 95% CI [-0.22, -0.02], $p = .012$.	-.12	
			M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Negative parenting ($n = 6932$) increases the risk of DV as both victim: $Zr = .23$, 95% CI [0.18, 0.28] and perpetrator: $Zr = -.21$, 95% CI [0.15, 0.27]	.23	.21
Park & Kim (2018)	27	1627 24		High levels of positive parenting ($n = 8455$) are associated with low levels of DV victimization: $Zr = -.17$, 95% CI [-0.22, -0.12] and low levels of DV perpetration: $Zr = -.15$, 95% CI [-0.21, -0.085]. Family relationship problems ($n = 527$) increase the likelihood of DV victimization: $Zr = .35$, 95% CI [0.28, 0.43] and DV perpetration: $Zr = .35$, 95% CI [0.25, 0.45]. Fear of violence in the family ($n = 1899$) is associated with DV victimization: $Zr = .24$, 95% CI [0.16, 0.31] and DV perpetration: $Zr = .21$, 95% CI [0.13, 0.30].	-.17	-.15
					.35	.35
					.24	.21

DV= Dating violence; K= Number of studies, k =Subsample; LS= Longitudinal studies; CSS= Cross-sectional studies; N= Number of total sample; n = Number of subjects in the subsample; N/I=No information (the r was standardized in accordance with the sample total); W= Women; M= Men; r = Mean effect size; OR= Odds ratio; CI = Confidence Interval; Q_{sub} = Heterogeneity within the subgroup. ¹ (sum of the Ns of each primary study). 95% CI for all values in the table. ¹The studies indicated correspond to the primary studies included in the meta-analysis. *The total Ns were calculated by eliminating all duplicate values for victimization, perpetration and per variable.

Secondly, in relation to group (or microsystem) variables (see Table 2), three ($k = 3$) studies analyzed the relationship between DV and the peer group. The meta-analytic review conducted by Garthe, Sullivan and McDaniel (2016) found an association between DV and aggressive and antisocial peer behaviors, being victimized by one's peers (bullying) and peer DV (i.e. DV among the peer group), although it does not specify the specific type of DV involved (physical, psychological or sexual). The study by Hébert et al. (2017) concluded that affiliation with deviant peers, peer victimization and peer sexual harassment (i.e. sexual harassment by peers) predicted greater degrees of DV (physical, threats, psychological and sexual), while support from peers was negatively associated with DV. Finally, Park and Kim (2018) found an association between having deviant peers, suffering from bullying or being a bully (physical, psychological and/or cyberbullying) and DV. Moreover, the factor found to best predict DV perpetration was having peers with problematic behavior. On the other hand, a high level of positive friendship was found to negatively correlate with both DV perpetration and DV victimization.

Also at the microsystem level, four ($k = 4$) studies analyzed the influence of family on DV. Bradford (1999) found a weak association between violence in the family of origin (defined as either having directly witnessed or experienced violence at home) and DV. Dee (2012) also found that child abuse in the family increased the risk of becoming involved in DV as either an aggressor or a victim. Similarly, Hébert et al. (2017) analyzed different types of child abuse in the family of origin and their relationship with DV, finding that sexual, psychological and physical child abuse, as well as neglect and witnessing intimate partner violence between parents, were all risk factors for becoming a victim of DV. Moreover, these authors also analyzed protective factors for DV, finding that parental support and supervision were negatively associated with DV. A little later, Park and Kim (2018) broad-

ened the analysis of family variables to include DV victimization and perpetration, finding that witnessing violence between one's parents is a strong predictor of DV victimization. Moreover, negative parenting (rejection of one's children, inconsistent discipline), family problems (fights, hurtful behavior) fear of violence in the family and child abuse (physical, psychological or sexual abuse by parents) were all found to be positively linked to DV, while positive parenting (communication and parental support) was negatively associated with this phenomenon.

Thirdly, in relation to contextual variables (exosystem), two ($k = 2$) studies analyzed the variables age and residential neighborhood (see Table 3). Wincentak et al. (2016) found that mean age did not predict significant prevalence rates of physical violence during courtship. Nevertheless, the mean age of the sample did predict a greater risk of sexual DV victimization among both sexes. Also, the meta-analytical review conducted by Park and Kim (2018) found that living in violent neighborhoods with a high level of ethnic heterogeneity was linked to higher levels of both perpetration and victimization, with the association with victimization being stronger. Moreover, when these authors analyzed the influence of residential neighborhood on DV, they found that high support in the neighborhood was negatively associated with DV perpetration and victimization.

Fourthly, in relation to the variables associated with the macrosystem, the results reported by Wincentak et al. (2016) indicate that belonging to a cultural minority, i.e. belonging to any cultural group that is not the dominant group of one's country of origin, was associated with DV perpetration and victimization, but only among women, while living in an economically disadvantaged region predicted greater risk of perpetrating and suffering physical DV among both women and men. This last finding was also confirmed by the meta-analysis carried out by Park and Kim (2018), which found

that socioeconomic status was negatively associated with DV perpetration and victimization.

The analysis of the differences between effect sizes for perpetration and victimization revealed significant differences in total effect for individual (ontogenetic) variables, with the *r* effect size being small and lower for victimization ($r = .15$) ($N = 682563$) than for perpetration ($r = .19$) ($N = 476112$) ($r_v - r_p = -.04$, $Z = -21.82$, $p = .0001$). Smoking and adolescent pregnancy, along with attempted suicide and social desirability, were found to correlate with a higher risk of DV victimization, with a small effect. Alcohol misuse, drug abuse and sex were also found to be associated with DV victimization, although with a smaller effect. Sex had a larger effect in relation to perpetration than in relation to victimization ($r_v - r_p = -.11$, $Z = -46.13$, $p = .0001$), although the difference was small. No differences were observed between perpetration and victimization in relation to alcohol misuse ($r_v - r_p = -.01$, $Z = -.66$, $p = .51$) or drug abuse ($r_v - r_p = -.01$, $Z = -1.39$, $p = .16$) (see Table 1). The difference between the *r*s for these two variables was not relevant.

At the micro level, significant differences were observed for the total effect of the variables, with the *r* being smaller for victimization .15 ($N = 943525$) than for perpetration .17 ($N = 202855$) ($r_v - r_p = -.02$, $Z = -14.76$, $p = .0001$). Nevertheless, the effect size of this difference was small (<.10). Peer sexual harassment was found to have the largest effect size in relation to DV victimization, followed by peer DV. Moreover, peer DV had the largest effect size in relation to aggression, and no significant differences were observed between victimization and perpetration ($r_v - r_p = -.01$, $Z = -.40$, p

= .68). The variables deviant peers and bullying were found to be associated with both DV victimization and perpetration, with the same effect size being found for both measures. Social support from peers was associated with both perpetration and victimization, with the difference not reaching statistical significance ($r_v - r_p = -.10$, $Z = -1.60$, $p = .11$). As regards violence in the family of origin, significant differences were found between DV perpetration and victimization ($r_v - r_p = -.03$, $Z = -14.63$, $p = .0001$), with the effect size being slightly larger for victimization. As regards parenting, the effect size was larger for DV perpetration ($r_v - r_p = -.07$, $Z = -8.92$, $p = .0001$), although this difference was not found to be relevant. Some effect sizes were found to be low at the micro level. Violence in the family of origin, parenting and bullying had effect sizes of between .12 and .19, while peer sexual harassment, peer DV, deviant peers and peer support had larger effect sizes, ranging between .23 and .28 (see Table 2).

At the exosystem level, the difference between victimization $r = .51$ ($N = 336677$) and perpetration ($N = 2338$) $r = .13$ was significant ($r_v - r_p = .43$, $Z = 20.50$, $p = .0001$) and moderate, with the larger effect size being found for victimization. In cases of victimization, age was associated with (sexual) DV, with a medium effect size, although this association was not observed in cases of perpetration. Neighborhood, on the other hand, was found to have a small effect size. Moreover, a significant (although not relevant) difference was observed between victimization and perpetration ($r_v - r_p = .09$, $Z = 0.03$, $p = .0001$), with the effect size being higher in relation to the former (see Table 3).

Table 3. Risk factors associated with DV at the Exosystem and Macrosystem levels:

Study	K	N	Sample (k)	Empirical evidence ¹	Vict. r	Perp. r
Exosystem						
Age. Victimization: $N = 334339$, $Zr = .51$, 95% CI [.51, .51], $r = .47$.						
Wincentak et al. (2016)	127	334339	M and W Aged between 13-18.	The older the informant the greater the risk of sexual DV: men $k = 13$ ($n = N/I$), $B = 2.00$, 95% CI [1.19, 3.35], $p = .01$, $Q_w = 21.69$, $p = .05$; women $k = 17$ ($n = N/I$), $B = 1.96$, 95% CI [1.30, 2.96], $p = .001$, $Q_w = 24.51$.		
Residential neighborhood. Victimization: $N = 2338$, $Zr = .22$, CI [.18, .26], $r = .22$; Perpetration: $N = 2338$, $Zr = .13$ CI [.09, .17], $r = .13$; *Total: $N = 2338$, $Zr = .17$, CI [.13, .21], $r = .17$.						
Park & Kim (2018)	27	162724	M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Living in a violent neighborhood ($n = 2338$) increases DV victimization: $Zr = .22$, 95% CI [.18, 0.26] and DV perpetration: $Zr = .13$, 95% CI [0.07, 0.19]. High support in one's neighborhood ($n = 2338$) is associated with lower levels of DV perpetration: $Zr = .08$, 95% CI [-0.12, -0.04].	.13	-.08
Macrosystem:						
Economic disadvantage. Victimization: $N = 335088$, $Zr = .08$, CI [.08, .08], $r = .08$; Perpetration: $N = 335.088$, $Zr = .10$, CI [.10, .10], $r = .10$; *Total: $N = 335088$, $Zr = .09$, CI [.09, .09], $r = .09$.						
Wincentak et al. (2016)	127	334339	M and W. Aged between 13-18. USA	Economic disadvantage predicts DV victimization and/or perpetration in both sexes. Victimization: Women $k = 62$ ($n = N/I$), $B = .08$, 95% CI [.19, .45], $p = .001$ and Men $k = 51$ ($n = N/I$), $B = .26$, 95% CI [.13, .50], $p = .001$. Perpetration: Women: $k = 35$ ($n = N/I$), $B = .36$, 95% CI [.21, .60], $p = .001$ and Men: $k = 38$ ($n = N/I$), $B = .37$, 95% CI [.20, .67], $p = .001$.	.10	
Park & Kim (2018)	27	162724	M and W (aged 13-22). USA (19), Switzerland (1), Taiwan (1) and Canada (6).	Higher socioeconomic status ($n = 749$) is associated with lower levels of both DV perpetration: $Zr = .08$, 95% CI [-0.14, -0.02] and DV victimization: $Zr = -.15$, 95% CI [-0.26, -0.04].		-.08

Study	K	N	Sample (k)	Empirical evidence ¹	Vict. r	Perp. r
Cultural minority. Victimization: $N = 334339$, $Zr = .27$, 95% CI [.26, .28], $r = .26$; Perpetration: $N = 334339$, $Zr = .27$, 95% CI [.26, .28], $r = .26$; *Total: $N = 334339$, $Zr = .27$, 95% CI [.26, .28], $r = .26$.						
Wincentak et al. (2016)	127	334339	M and W Aged between 13-18. USA CSS	Belonging to a cultural minority predicts being a victim of physical DV among women: Victimization $k = 32$ ($n = N/I$) $B = 1.01$, 95% CI [1.00, 1.02], $p \leq .05$ Perpetration: $k = 53$, ($n = N/I$) $v B = 1.01$, 95% CI [1.01, 1.02] $p = .001$.27	.27

DV= Dating violence; K= Number of studies, k=Subsample; LS= Longitudinal studies; CSS: Cross-sectional studies; N= Number of total sample; n= Number of subjects in the subsample; N/I=No information (the r was standardized in accordance with the sample total); W= Women; M= Men; r= Mean effect size; OR= Odds ratio; CI = Confidence Interval; Q_h = Heterogeneity within the subgroup. *The totals were calculated by eliminating all duplicate values for victimization, perpetration and per variable. 95% CI for all values in the table. ¹The studies indicated correspond to the primary studies included in the meta-analysis. *The total Ns were calculated by eliminating all duplicate values for victimization, perpetration and per variable.

At the macro level, significant differences were found in the total effect size between victimization ($r = .17$, $N = 335088$) and perpetration ($r = .18$, $N = 335088$) ($r_1 - r_2 = -.01$, $Z = -4.22$, $p = .0001$), with a small effect size. The association between economic disadvantage and victimization and perpetration was low, and a significant but weak difference was found between the two groups ($r_1 - r_2 = -.02$, $Z = -11.12$, $p = .0001$). A low-to-moderate association was found between belonging to a cultural minority and DV victimization and perpetration, with no differences being found between the two groups (see Table 3).

Overall, we found that the effect size for exosystem variables was large (Level 3, $N = 336677$, $r_3 = .51$) and indeed was larger than for the rest of the levels, all of which had similar effect sizes: macro (Level 4, $N = 335088$, $r_4 = .18$), individual (Level 1, $N = 824336$, $r_1 = .17$) and micro (Level 2, $N = 956595$, $r_2 = .16$). The r comparisons revealed significant differences between the macro and exo ($r_4 - r_3 = .36$, $Z = -156.03$, $p = .0001$), macro and micro ($r_4 - r_2 = .02$, $Z = 10.25$, $p = .0001$) and macro and individual levels ($r_4 - r_1 = .01$, $Z = 5.05$, $p = .0001$). Similar differences were also found between the exo and micro ($r_3 - r_2 = .38$, $Z = 200.28$, $p = .0001$), exo and individual ($r_3 - r_1 = .37$, $Z = 191.19$, $p = .0001$) and micro and individual levels ($r_1 - r_2 = .01$, $Z = 6.84$, $p = .0001$). A large difference was observed in effect size between the exo level and the other three levels and significant differences were also found in total effect size between perpetration ($r = .18$, $N = 682054$) and victimization ($r = .21$, $N = 1629175$) ($r_1 - r_2 = -.03$, $Z = -21.63$, $p = .0001$).

Discussion

The 15 meta-analytical studies included in this review describe and group together the factors associated with DV in accordance with the ecological model, thus reaffirming this structure as a valid means of describing the DV risk and protective factors analyzed. In this review, the variables which explain DV (victimization and perpetration) are divided across four levels (ontogenetic or individual, microsystem, exosystem and structural macrosystem).

At the individual level, the variables were found to have a small effect size in relation to DV. A strong association was observed between DV victimization and cigarette smoking,

adolescent pregnancy, suicide attempts and social desirability, along with a weaker correlation between victimization and drug abuse and sex. Sex and, to a lesser extent, alcohol misuse and drug abuse were linked to DV perpetration. The results indicate that DV victims are more likely to smoke than non victims. It may be that victims use nicotine as a maladaptive coping strategy associated with a reduction of the negative affect and anxiety linked to DV, as well as other stress-related factors (Crane et al., 2013). Other types of consumption linked to DV (albeit to a lesser extent) include alcohol misuse and drug abuse. Alcohol misuse is associated with both DV perpetration and victimization. Nevertheless, the studies included in the review report certain limitations linked to alcohol misuse measures and the type of design used, which was mainly experimental or laboratory-based. Experimental studies may have little external validity, and longitudinal studies fail to clarify the time direction of the association observed between alcohol misuse and victimization (Devries et al., 2013b). As for drug abuse, the results confirm a weak association between this variable and DV perpetration. Marijuana use is linked to both physical DV perpetration and victimization. It may be that marijuana consumption is a consequence of DV, and is used as a means of coping with anxiety. It may also be linked to a high-risk social environment, in which the purchase and use of drugs may prompt individuals to either become victims of or perpetrate more violence (Bean, 2001). Nevertheless, some authors suggest that drug use and abuse may also serve to disinhibit violent behavior (Ferrer Pérez & Bosch Fiol, 2005).

Adolescent pregnancy was found to be associated with a history of abuse among teenage girls, and particularly with the concurrence of physical and sexual violence. This result is consistent with those reported by previous reviews, in which unwanted adolescent pregnancy was identified as a variable linked to DV victimization (Joly & Conolly, 2016; Vezina & Hebert, 2007).

Sex is also related to DV, and was found to have a greater influence over perpetration than over victimization, although the association was fairly weak. Prevalence rates for physical DV perpetration were higher among women than among men, while the reverse was found to be true for sexual DV perpetration, with the rate being higher among men than among women (Wincentak et al., 2016). Nevertheless, this

finding is not consistent with the results of the systematic review conducted by Jennings et al. (2017), which found that women in all age groups reported higher prevalence rates of victimization than men. The studies revealed that the type of sample, measurement instrument, reactive violence among women and severity of abuse influenced violence reporting rates among women (Joly & Conolly, 2016; Wincentak et al., 2016). Another variable found to influence DV reporting is social desirability, which was found to increase violence underreporting among victims (Sugarman & Hotelling, 1997). One possible explanation for this underreporting may be linked to the stigma associated with being a victim of violence, which has been widely documented in the adult population (Joly & Conolly, 2016; Puente-Martínez, 2017). Suicide attempts are also linked to victimization among young people (Castellví et al., 2016), as well as with being a woman (Devries, 2013a), although only a few studies include male samples also (Devries, 2013a). This finding is important, since in both Spain and Europe in general, most suicides occur between the ages of 15 and 25. It is therefore a problem with a high youth mortality rate.

At the microsystem level, peer sexual harassment and peer dating violence were found to be the strongest predictors of DV. One of the studies found a significant moderation effect of gender on the relationship between peer sexual harassment and DV, with the effect being higher among women (Hérbert et al., 2017). Moreover, having deviant peers and being bullied by peers (physical or psychological bullying or cyberbullying) increase the likelihood of both DV perpetration and victimization. Nevertheless, peer support was found to reduce the likelihood of being either victim or perpetrator, thereby suggesting that not having a positive social support network in one's immediate environment increases the risk DV. These results confirm that peers are one of the most influential socializing agents during adolescence, for both prosocial behavior (Steinberg, 2014) and violent behavior (Miller-Johnson & Costanzo, 2004). Moreover, among the family variables studied, having suffered from different types of violence in one's family of origin (physical, sexual or psychological child abuse or witnessing violence between one's parents) is linked to DV. Problematic family relations, negative parenting and fear of violence in the family all increase the risk of DV for both victims and perpetrators, although this effect is fairly weak. On the other hand, greater parental support and control reduce (albeit only slightly) the likelihood of both suffering and perpetrating abuse.

At the exosystem level, age is strongly associated with sexual DV. Indeed, the largest effect size found in the model was for this association. As in previous studies, in this review also age was treated as a contextual variable within the ecological model (Puente-Martínez, Ubillos-Landa, Echeburúa y Páez-Rovira, 2016). One possible explanation for this finding may be that in DV, abuse becomes more frequent and severe over time, with a progressive scaling up of violence levels occurring as those involved grow older (William & Frieze, 2005; Walker, 1989). Moreover, sexual behaviors tend to ap-

pear more frequently during the late teen years (ages 17-19) than during early adolescence (ages 10-14), since it is during this later stage that sexual relations and practices become more frequent among young people (INJUVE, 2016; Eaton et al., 2010). From this perspective, it is more likely for sexual violence to occur among older adolescents and young adults. In this sense, the study by Smith, White and Holland (2003) found that during adolescence, the most common form of sexual victimization is coercive verbal sexual aggression, while among older university students it is more common to find more serious forms of violence, such as rape. It is also important to bear in mind that the studies included in this review were all based on broad definitions of sexual violence encompassing a wide range of behaviors (unwanted kisses or fondling, threatening behavior, etc.) (Wincentak et al., 2016). Living in a violent neighborhood was found to be positively related to DV perpetration and victimization, while support from the community was negatively associated with DV victimization, thus confirming that social-community support may be a protective factor against dating violence. The variables analyzed (violent neighborhood and age) are more closely linked to being a victim of DV than to perpetrating this kind of violence.

Finally, at the macrosystem level, belonging to a cultural minority within one's country of origin is associated among women with physical violence victimization and perpetration (Foshee et al., 2008; Teitelman, Ratchiffe, McDonald, Brawnner & Sullivan, 2011). These results highlight the importance of taking social and cultural context into account when attempting to explain DV. Both victimization and perpetration rates among women belonging to cultural minorities have been linked to extremely violent contexts, exclusion, discrimination and other geographical factors such as region and poverty (Carbone-López, 2013; Wincentak et al., 2016). The relationship between victimization and belonging to a cultural minority was not confirmed in the case of men. Economic disadvantage, on the other hand, was found to increase the risk of perpetration and victimization among both sexes. Although the effect size was very small, previous studies have concluded that poorer regions are those with the highest levels of DV victimization and perpetration among teens (Gressard, Swahn & Tharp, 2015).

Finally, when the differences between the various levels are analyzed, the results reveal that the exosystem variables have a large effect size that is greater than the effect sizes found for the macro, individual and micro levels, which were all similar and fairly low. This confirms that factors basically related to age, but also to the social-community environment, are those most closely related to DV, as opposed to individual factors or those pertaining to the subject's more immediate or macro environment. In other words, the exosystem variables were the most relevant for explaining DV victimization and perpetration. Although Cohen's criterion was applied in this study, based on reviews of meta-analytical studies (Gignac & Szodorai, 2016; Richard, Bond & Stokes-Zoota, 2003) in which the authors recommend considering

correlations of .10, .20 and .30 to be small, typical and relatively large (respectively), we can conclude that the macro, micro and individual levels have a near-to-average effect size (.18-.16). Moreover, it is important to highlight the effect size of certain variables, such as belonging to a cultural minority at the macro level, and peer sexual harassment, peer DV and aggressive peer behavior at the micro level, the effect sizes of which can be considered moderate-to-large. Individual variables were found to have a smaller yet significant effect size in the studies analyzed, indicating that their influence on DV is more limited.

This study has a number of limitations. Firstly, the samples analyzed for the different risk factors were very large, and care must therefore be taken not to overestimate the r size and the inter-group and inter-level differences (Borenstein et al., 2009). Secondly, the results obtained are mainly limited to the population of North America. It would therefore be interesting to carry out further studies in other regions such as Latin America and Europe. Possible moderation effects should also be analyzed in accordance with region and culture. The third limitation is that not all the studies specified the relationships between risk and protective factors and different types of DV. Finally, some meta-analytical studies reporting an association between DV and other variables such as negative emotions ($r = .25$) (Birkley & Eckhardt, 2015) and depression ($r = .17$) (Beydoun, Kaufman, Lo & Zonderman, 2012; Devries et al., 2013a) were excluded from the review, because they included joint teen DV and adult IPV samples, with no separate analysis.

Despite these limitations, however, one of the strengths of this study is that it systematizes meta-analytical research on the main variables associated with DV, as well as some of the principal risk and protective factors associated with the phenomenon, considering perpetration and victimization separately. Moreover, it is the first systematic review carried out of DV which takes into account all the variables analyzed in previous meta-analyses based on the ecological model. This information complements the results reported by previous reviews on DV and enables us to distinguish between the

characteristics of DV at different levels (onto, micro, exo and macro), clearly defining it as a separate problem from intimate partner violence in adult couples.

One of the main practical implications of the findings reported is that they enable a distinction to be made between variables in terms of their capacity to predict DV perpetration and victimization. Moreover, it suggests that greater efforts should be made in the field of prevention, through early intervention programs aimed at teenagers and the clinical care provided to young women at risk of becoming DV victims. Within the clinical environment, the results suggest that more work should be done with the adolescent population to prevent suicide attempts, teenage pregnancy and drug abuse. Greater efforts also need to be made to prevent violence in the future, given that DV victimization among teenage girls strongly predicts victimization during adulthood (Shorey et al., 2008). The results of the study also suggest that a violent environment and peer support are relevant factors to bear in mind during any intervention aimed at preventing DV. They also enable possible at-risk groups to be identified so that culturally-sensitive interventions can be designed and macrosystem vulnerabilities can be taken into account. Finally, the findings suggest that the social and community support perceived by young people may be a protective factor at the exo level, particularly among women from cultural minorities.

Future research may wish to analyze how these risk factors are interrelated, and to study their accumulative effects. Similarly, it would be interesting to analyze the differences observed in accordance with sample type and to conduct cross-cultural studies that may provide greater insight into the characteristics and specificities of DV and how it differs from IPV. DV forms part of a dynamic systems of influences, and as such, any attempt to mitigate or reduce it requires a dynamic, multi-factor approach that takes into consideration risk factors at all levels (ecological model), as well as their possible interactions. In short, the results obtained confirm prior findings which indicate that DV is a relevant topic of research, due to the magnitude and consequences of the problem.

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