

An exploration of sibling violence predictors

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Abstract

Purpose – Sibling violence is generally considered to be the most prevalent form of family violence. This paper aims to examine the association between sibling violence and other forms of violence: parent-to-parent violence, parent-to-child violence and dating violence.

Design/methodology/approach – Data were collected from 590 Portuguese university students.

Findings – There was a strong positive association between sibling violence and other forms of family violence. Psychological and physical aggression is highly prevalent among siblings. Results also show that sibling violence is the most prevalent form of family violence. Regression models demonstrated that parent-to-child violence is a substantial predictor of sibling violence.

Originality/value – The results of this study point to the importance of studying the co-occurrence of different forms of family violence.

Keywords Sibling violence, Parent-to-parent violence, Parent-to-child violence, Dating violence, Family life, Problem families, Portugal

Paper type Research paper

Introduction

Human history is replete with violence, exercised either individually or collectively, and it remains a constant in our days. However, it seems that the way it is perceived has changed: the violence between humans no longer is seen as a normal aspect of their condition and is now considered a disease that can threaten our existence (Rapoport, 1997) and constitutes a serious social problem. Today, issues involving family violence, namely spouse abuse, child abuse and elderly abuse are researched in an attempt to better understand why it happens. Indeed, the study of different forms of family violence permits a better understanding of how to assess, prevent and intervene (Tolan *et al.*, 2006). Nevertheless, sibling violence remains underreported.

Research concerning this problem suggests that sibling violence is highly prevalent and is thought to be the most common form of family violence (Finkelhor *et al.*, 2006; Herzberger, 1996; Straus *et al.*, 1980). Since Straus *et al.* (1980) have alerted to this problem, several studies have been conducted on sibling violence, and it still remains underestimated. Roscoe *et al.* (1987) found that 88 per cent of the males and 94 per cent of the females reported to be victims of sibling violence in the previous year. In a more recent study, Hardy (2001) suggested that aggressive and sexual contact among siblings is frequent. Almost half of the sample in this study was physically assaulted by a sibling and 7.4 per cent reported some sexual behavior with a sibling. Graham-Bermann *et al.* (1994) found a high level of conflict and violence among siblings in a large sample of college-aged participants ($n = 1,685$). Kolko *et al.* (1996) found that 79 per cent of the children aged between six and 13 years old, reported being assaulted by siblings. Recently, Kettrey and Emery (2006) found that 83 per cent in a sample of 200 college students perpetrated or were victims of mild or

severe physical violence by siblings in their sibling relationships. Mackey *et al.* (2010) also show that sibling violence is highly prevalent.

Sibling violence is often seen as a normal process of rivalry and thus it is difficult to acknowledge. According to Finkelhor *et al.* (2006), this is stereotyped in the society as a less serious form of aggression. Indeed, most victims do not recognize these behaviors as a form of violence (Kettrey and Emery, 2006). But how can sibling violence be recognized? Many factors, such as the severity and intent of an act, as well as the emotional impact must be taken into account to determine whether a sibling interaction is abusive (Kiselica and Morrill-Richards, 2007).

As in other relationships, sibling violence may include physical aggression (e.g. hitting, biting, slapping, shoving, tickling), psychological abuse (e.g. teasing, ridiculing, insulting) and sexual abuse or incest (e.g. attempted penetration, intercourse, rape). Physical aggression occurs when a sibling intentionally hurts or kills the other sibling, including also behaviors such as pushing, pulling hair, scratching and pinching, kicking, beating with objects (Wiehe, 1997) or weapons handling (Caffaro and Conn-Caffaro, 1998). Psychological abuse is nonphysical behaviors that intend to psychologically or emotionally harm (e.g. lower self-esteem, raise anxiety), such as name calling, teasing, and threatening injury the person, pets, or property (Caspi, 2012). However, because of the absence of physical evidence psychological abuse is difficult to detect (Wiehe, 2002). No generally accepted definition of sibling incest is available (Carlson, 2011). Moreover, this type of sibling violence has received scant attention in the research and, as such, little is understood about the complexities of sexual interaction among siblings (Caspi, 2012). Sibling incest has been described as including inappropriate behaviors such as: fondling or sexual contact; indecent exposure; masturbation; oral sex; anal sex; exposure to pornography (Adler and Schutz, 1995; Wiehe, 1997). Cole (1982) distinguishes between coercive abuse and natural curiosity and exploration.

Some studies reports a strong association between sibling violence and other forms of family violence, namely spouse abuse (Graham-Bermann *et al.*, 1994; Haj-Yahia and Dawud-Noursi, 1998; Straus *et al.*, 1980), parent-child abuse (Caffaro and Conn-Caffaro, 1998; Simonelli *et al.*, 2002; Straus *et al.*, 1980), and also with dating abuse (Noland *et al.*, 1994; Simonelli *et al.*, 2002). Linares (2006) found that most siblings experienced multiple (65 per cent) as compared to single (35 per cent) type familial victimization. According to several studies (Gelles, 1997; Hotelling and Sugarman, 1986), witnessed interparental aggression increases the likelihood of dating or marital violence as an adult (intergenerational transmission of violence hypothesis). More recent studies (Richmond *et al.*, 2009) argue that exposure to multiple types of childhood victimization is common. This is called "poly-victimization" by some authors (Finkelhor *et al.*, 2007). According to Finkelhor *et al.* (2007) the concepts of poly-victimization and poly-victim help target and understand a group of children who suffer from particularly high levels of different types of victimization. Other studies have identified other factors that may contribute to the occurrence of sibling violence, namely, the lack of parental supervision (Whipple and Finton, 1995), the lack of stable parental value system (Rosenthal and Doherty, 1984), inappropriate expectations by parents that let an older sibling in charge of a younger one, parents overwhelmed by their own problems (drug, alcohol abuse, mental and physical illness) (Wiehe, 1997). Boys and girls are at equal risk of being involved in future criminal activities (Graham-Bermann *et al.*, 1994). Although, gender is likely a factor in sibling aggression, findings have been generally inconsistent (Caspi, 2012). Some studies (Dunn and Kendrick, 1982; Eriksen and Jensen, 2009) demonstrate gender differences, boys more than girls engage in violence between siblings. The couple Caffaro (1998) reported that boys are twice more often perpetrators than girls. Gelles and Cornell (1990) also suggest that girls are less violent towards siblings than boys, but the difference is relatively small. Roscoe *et al.* (1987) found few differences between boys and girls regarding the use, or experience of violent behavior. While some have reported that older brother-younger sister pairs represent the most common pair for sibling violence (Button and Gealt, 2010; Graham-Bermann *et al.*, 1994). Hoffman *et al.* (2005) have found that boys with brothers committed more types of violence than any

other dyad. One explanation for the boys to be perpetrators of most violence was suggested by Leder (1993), stating that society creates gender role expectations which are too hard for boys, so they should be more aggressive and more competitive than girls. Parents also actively encourage physical play and play with toys that can promote more physical activity among boys than girls (Block, 1983). Also According to Hoffman *et al.* (2005), the patterns of violence among male siblings appear to reflect the cultural acceptance of violence among men and to a lesser extent the prohibition of violence against women. Parents being less involved when in the presence of male dyads, compared to other dyads, may also contribute to gender being a risk factor for the occurrence of this form of violence.

Sibling violence has short- and long-term consequences. Some studies have demonstrated that sibling violence, especially the chronic one, contributes to the development of traumatic symptoms (Finkelhor *et al.*, 2006), depression in child and adult survivors, lowered self-esteem (Wiehe, 1997), anxiety (Graham-Bermann *et al.*, 1994; Mackey *et al.*, 2010), eating disorders, problems with drugs and alcohol (Wiehe, 1998), school violence (Duncan, 1999) aggression and delinquency among boys (Garcia *et al.*, 2000). Additionally, sibling assault survivors are at risk for repeating dysfunctional patterns and roles in other relationships (Caffaro and Conn-Caffaro, 1998). Rudd and Herzberger (1999) found that brother-sister sexual abuse was identical to father-daughter sexual abuse, and has the same psychological consequences as depression, drug or alcohol problems, Post Traumatic Stress Disorder symptoms, and sexual promiscuity. Another potential consequence of being abused by a sibling is an increased likelihood of later victimization or perpetration of violence in a dating relationship (Simonelli *et al.*, 2002) and other forms of adult violence (Mangold and Koski, 1990). Also, Whipple and Finton (1995) draw our attention to the fact that victims of sibling abuse may also have the tendency to repeat the role of the victim in others relationships.

The Portuguese reality

Portuguese women, children, and the elderly have historically possessed few rights guaranteeing their health and welfare. Only in the last three decades have some changes occurred in the way we see them. Unfortunately, fundamental social and cultural changes may be required before there can be substantial reductions in family violence. Portugal remains, to a large extent, a patriarchal society in which males are expected to display dominance and control over women (Santos and Mercurio, 2004).

The first study conducted in Portugal about child and partner abuse using a representative survey and the first to address both forms of abuse was carried out recently (Machado *et al.*, 2007). According to the authors, the results suggested that physical and emotional abuse of children and/or partners may affect nearly one in four families in the north of Portugal. The prevalence of physical abuse was approximately 12 per cent for both forms of abuse. In Figueiredo *et al.* (2009) examined the self-reported prevalence of childhood physical and sexual abuse in a large sample of Portuguese parents and results show that the prevalence of abuse was 73 per cent. Prevalence rates from both studies are high, however, caution must be exercised when comparing data, given the different definitions, time intervals and methods of data collection. Concerning elderly abuse, because it is a relatively new topic very little research regarding rates of abuse against the aging population can be found (Ferreira-Alves and Santos, 2011). Few studies have been carried out on sibling violence (Relva, 2005). Results also suggest high prevalence rates: approximately 92 and 73 per cent of subjects reported being victims of psychological and physical aggression, respectively, by a sibling (Relva *et al.*, in press).

This brief overview of the research published in Portugal illustrates the limited number of studies on family violence, the non-representativeness of the sampling, and the absence of an attempt to correlate different forms of abuse.

Because in Portugal there is systematic data characterizing co-occurrence of different forms of family violence, this study is a pioneer in attempting to do the following:

- Examine the prevalence of different forms of violence.
- Analyze gender differences according to violence forms (perpetration and victimization scales between siblings, parent-to-parent, parent-to-child and dating relationships).
- Analyze possible predictors of sibling violence.
- Verify significant differences among several forms of violence (siblings, parents, and parents-child) according to the presence or absence of types of violence (psychological and physical).

Method

Participants

The sample was composed of 590 Portuguese university students who have siblings. The age of participants ranged from 17 to 52 years old ($M = 20.3$, $SD = 4.5$) and more than half were female (62.6 per cent). Most of the participants were born in Portugal (91.9 per cent), 5.6 per cent were born in other European countries and 2.5 per cent in other countries. More than half of the participants have only one sibling (65.1 per cent), 23.7 per cent have two, 7.3 per cent have three, only 2.7 have four and 1.2 per cent have five or more siblings. More than half of their fathers (67.5 per cent) and mothers (63.6 per cent) have basic schooling and only 10.4 per cent of the fathers and 12 per cent of the mothers of participants have a higher education.

Procedure

After obtaining institutional commitments, anonymous questionnaires were self-administered in classes of different Portuguese universities. Its completion was voluntary and there were no incentives. The administration schedule was agreed upon with the leaders of the groups, usually before or after school. The first author stated the objectives of the study in each group and conducted the debriefing of the participants after collecting the instruments. To avoid sample homogeneity, participants were recruited from courses in different fields of study. The pack of questionnaires delivered to each group was counterbalanced to control effects of practice/fatigue.

Instruments

The revised conflict tactics scale CTS2-SP (sibling version). The conflict tactics scales (CTS) have been used for decades to evaluate violence within families and intimate relationships (Straus *et al.*, 2003). The CTS2-SP (Straus *et al.*, 1996) was used to measure violence among siblings and participants were instructed to answer about the sibling closest in age. Participants were invited to report when they were 13 years old. The CTS2-SP consists of 78 items grouped into five scales:

- Negotiation (six items).
- Psychological aggression (eight items).
- Physical assault (twelve items).
- Sexual coercion (seven items).
- Injury (six items) but for the purposes of this study we only used the psychological aggression and physical assault scales.

Regarding psychological aggression we decided to exclude one of the items because for the Portuguese validation of CTS2-SP (Relva *et al.*, in press) in all items, except one, the item-to-total correlations are over 0.30. The psychometric validation for the Portuguese population was found to be adequate, Cronbach's α was performed for the psychological aggression scale with a reliability coefficient of 0.76 and 0.75, for perpetration and victimization, respectively; and Cronbach's α for physical assault was also performed with a reliability coefficient of 0.80, the same for victimization and perpetration scales. The CTS2-SP questions are presented in relationship pairs (experiences of received and expressed psychological and physical assault). The scale of response reflects the frequency of each

behavior over a period of time (0) this has never happened, (1) once a year, (2) twice a year, (3) three to five times a year, (4) six to ten times a year, (5) 11-20 times a year, (6) more than 20 times a year, and (7) not that year, but it happened.

The CTS (parent-to-child version). This modified version of the CTS was used to examine experiences by adults of childhood maltreatment by parents (subjects have to report for when they were 13 years old). For this study the psychological aggression and physical assault scales were used. For the sample presented, a Cronbach's α was performed with a reliability coefficient of 0.67 for psychological aggression, perpetrated by both parents, and a reliability coefficient of 0.74 and 0.76 for physical assault perpetrated by the mother and father, respectively. The scale of response reflects the frequency of each behavior over a period of time (0) this has never happened, (1) once a year, (2) twice a year, (3) three to five times a year, (4) six to ten times a year, (5) 11-20 times a year, (6) more than 20 times a year, and (7) not that year, but it happened.

The CTS (parent-to-parent version). This version of CTS was used to examine experiences by adults of witnessed violence between parents when they were 13 years old. For this study, psychological aggression and physical assault scales were used. For the presented sample, a Cronbach's α was performed with a reliability coefficient of 0.70 for psychological aggression, perpetrated by the mother, and a reliability coefficient of 0.79 for the psychological aggression, perpetrated by the father. For the physical assault scale the reliability coefficient was 0.79 and 0.92, when perpetrated by the mother and father, respectively. The scale of response reflects the frequency of each behavior over a period of time (0) this has never happened, (1) once a year, (2) twice a year, (3) three to five times a year, (4) six to ten times a year, (5) 11-20 times a year, (6) more than 20 times a year, and (7) not that year, but it happened.

The CTS revised (CTS2). Participants were asked how many times during the past 12 months psychological and physical aggression was used by or against him in their dating relationship. For the sample presented, a Cronbach's α was performed with a reliability coefficient of 0.80 for psychological aggression perpetrated by the subject, and a reliability coefficient of 0.79 for psychological aggression perpetrated by partner. For the physical assault scale the reliability coefficient was 0.82 and 0.83, when perpetrated by the subject and the partner, respectively. The scale of response reflects the frequency of each behavior over a period of time (0) this has never happened, (1) once in the past year, (2) twice in the past year, (3) three to five times in the past year, (4) six to ten times in the past year, (5) 11-20 times in the past year, (6) more than 20 times in the past year, and (7) not that year, but it happened.

Results

Statistical analyses

Statistical analysis was performed with SPSS – version 16. Frequencies analyses were used to determine the prevalence of psychological and physical aggression in different forms of violence (siblings, parent-to-parent, parent-to-child and dating violence). Descriptive statistics, *t*-test, multiple hierarchical regression, and univariate variance analyze (ANOVA) were conducted to determine statistically significant relationships.

An independent-sample *t*-test was conducted to compare the different forms of violence according to gender. Besides, multiple hierarchical regression analysis was developed to explore the relation between dependent variables (sibling and dating violence) and independent or predictor variables (parent-to-parent violence, parent-to-child violence, gender and number of siblings). Additionally univariate variance analyze (ANOVA) was performed in order to understand if factors under study have a statistically significant effect on the occurrence of sibling violence and dating violence.

Descriptive analyses

Prevalence rates

Data from Table I show that more than 90 and 70 per cent of participants received and perpetrated at least one instance of psychological aggression and physical assault from a

Table I Percentage of subjects receiving and perpetrating psychological and physical assault in siblings, parent-to-parent, parents-to-child and dating relationships

	Psychological aggression (%)	Physical assault (%)
Perpetrated sibling violence	91.5	72.5
Victim of sibling violence	90.5	70.7
Mother-to-father violence	61.8	9.1
Father-to-mother violence	61.3	13
Mother-to-child violence	77	42
Father-to-child violence	70.6	46.6
Perpetrated dating violence	53.7	13.3
Victim of dating violence	49.2	11

sibling, respectively. The most frequently reported acts as a victim and as a perpetrator of sibling violence were insulting, doing something to irritate, yelling and slapping. A high percentage of participants witnessed at least one violent behavior between parents (65.6 per cent). The participants also report that they have witnessed their father being a victim of psychological aggression (61.8 per cent) and physical assault (9.1 per cent) perpetrated by their mother. Reports of the mother being a victim of the same type of violence by the father (61.3 and 13 per cent, respectively) were also evident. The most frequently reported acts witnessed between parents by the participant were insulting, yelling, doing something to irritate, and stomping out of the room. In the present study, a high percentage (85.3 per cent) of participants was a victim of at least one aggressive behavior from their parents. Also a high percentage (77 per cent) of participants received at least one instance of psychological aggression and 42 per cent received at least one instance of physical assault perpetrated by the mother. Approximately 70.6 and 46.6 per cent of participants were victims of at least one instance of psychological aggression and physical assault, respectively, perpetrated by the father. The most frequent acts reported were yelling, slapping, insulting and biting. Finally, approximately half of the sample reported receiving and perpetrating at least one instance of psychological aggression by and against a date (49.2 and 53.7 per cent, respectively). Also 11 per cent of participants were victims, at least once, of physical assault from a partner they were dating and 13.3 per cent of participants perpetrated at least one instance of physical assault against a date. The most frequently reported acts were insulting, yelling, stomping out of the room and grabbing.

Differences of gender according to violence forms

An independent-sample *t*-test (Table II) was conducted to compare the different forms of violence according to gender. There was a significant difference in scores of perpetrated sibling violence, where males ($M = 1.28$, $SD = 1.102$) present a significant high value compared to females ($M = 0.95$, $SD = 0.824$) [$t(367) = 3.284$; $p = 0.001$]. There were also

Table II Mean and standard deviations of violence forms for males and females

Violence forms	1 – male		2 – female		Significative differences
	M	SD	M	SD	
Perpetrated sibling violence	1.28	1.102	0.99	0.824	0.001
Victim of sibling violence	1.27	1.055	1.11	0.837	
Mother-to-child violence	0.54	0.690	0.51	0.556	
Father-to-child violence	0.47	0.719	0.38	0.491	
Mother-to-father violence	0.19	0.396	0.31	0.426	0.001
Father-to-mother violence	0.23	0.569	0.42	0.782	0.001
Perpetrated dating violence	0.20	0.563	0.24	0.411	
Victim of dating violence	0.14	0.516	0.20	0.379	

Note: Mean and standard deviations of violence forms for males and females

significant differences in scores of mother-to-father violence, with significantly higher values for females ($M = 0.31$, $SD = 0.426$) compared to males ($M = 0.19$, $SD = 0.396$) [$t(473) = -3.425$; $p = 0.001$]. Finally, father-to-mother violence scores show significant differences, where female values ($M = 0.42$, $SD = 0.782$) were also higher than males ($M = 0.23$, $SD = 0.569$) [$t(549) = -3.490$; $p = 0.001$].

Prediction of sibling and dating violence forms – hierarchical multiple regression models

Multiple hierarchical regression analysis was conducted to explore the relation between dependent variables (sibling and dating violence) and independent or predictor variables (parent-to-parent violence, parent-to-child violence, gender and number of siblings). Multiple regression is not only a technique, but a family of techniques based on the principles of correlation, although with a more sophisticated exploration of the relationship between variables. Regression analysis gives us three types of information, namely the possibility that a number of variables can predict a given outcome, in which the variable represents the greatest contribution to the result, and still the possibility to predict a result from a variable when the effect of another variable is being controlled (for further statistical control variables introduced) (Pallant, 2001). For the present study, multiple hierarchical regression analysis was used to analyze the effects of gender, the number of siblings, parent-to-parent and parent-to-child violence as predictors of sibling and dating violence, separately.

In this analysis six blocks were introduced according to a predetermined order. Gender and number of siblings were initially introduced, allowing to control its explanatory power over the individual model. It is noteworthy that in the case of the analyses in the present sample, it was necessary to create a dummy-coded gender variable (encoding the female gender as “one” and the male as “zero”), which was inserted in the same block of the hierarchical regression analysis. Each dummy represents the comparison of the effect between groups to explain the variance of the model against the dependent variables (Cohen *et al.*, 2003).

In the first model (perpetration of sibling violence), the results of the regression indicated that three predictors explained 27 per cent of the total explained variance, by order of importance: mother-to-child violence [$F(5,568) = 38.42$; $p = 0.000$] ($R^2 = 0.253/R^2$ change = 0.148) ($\beta = 0.345$); father-to-child violence [$F(6,567) = 34.90$; $p = 0.000$] ($R^2 = 0.519/R^2$ change = 0.017) ($\beta = 0.195$) and gender [$F(1,572) = 12.09$; $p = 0.001$] ($R^2 = 0.021/R^2$ change = 0.021) ($\beta = -0.122$), highlighting the role predictor of boys (Table III). For the second model, being a victim of sibling violence, two predictors explained 29, 88 per cent of total variance namely, mother-to-child violence [$F(5,568) = 29.88$; $p = 0.000$] ($R^2 = 0.208/R^2$ change = 0.127) ($\beta = 0.299$); and father-to-child violence [$F(6,567) = 34.90$; $p = 0.000$] ($R^2 = 0.299/R^2$ change = 0.021) ($\beta = 0.216$) (Table III). Concerning dating violence, results show that perpetration of dating violence has a

Table III Hierarchical multiple regression analyses predicting perpetration and victimization of sibling violence

	R^2	R^2 change	B	SE	β	$Sig.$
<i>Step 1</i>						
Gender	0.021/0.007	0.021/0.007	-0.239/-0.114	0.072/0.073	-0.122/-0.059	0.001/0.117
<i>Step 2</i>						
Number of siblings	0.021/0.007	0.000/0.000	-0.024/-0.104	0.031/0.031	-0.027/-0.017	0.450/0.046
<i>Step 3</i>						
Mother-to-father violence	0.101/0.080	0.080/0.073	-0.076/-0.004	0.123/0.124	-0.034/-0.002	0.536/0.976
<i>Step 4</i>						
Father-to-mother violence	0.105/0.081	0.004/0.001	0.047/-0.012	0.066/0.067	0.036/-0.002	0.476/0.857
<i>Step 5</i>						
Mother-to-child violence	0.253/0.208	0.148/0.127	0.537/0.455	0.085/0.085	0.345/0.299	0.000/0.000
<i>Step 6</i>						
Father-to-child violence	0.519/0.229	0.017/0.021	0.314/0.341	0.086/0.087	0.195/0.216	0.000/0.000

significant contribution from three variables, with 34.2 per cent of total explained variance, by order of importance: mother-to-child violence [$F(5,476) = 49.38$; $p = 0.000$] ($R^2=0.342/R^2$ change=0.061) ($\beta = 0.285$); father-to-mother violence [$F(4,477) = 46.43$; $p = 0.000$] ($R^2=0.280/R^2$ change=0.038) ($\beta = 0.260$), and mother-to-father violence [$F(3,478) = 51.07$; $p = 0.000$] ($R^2=0.243/R^2$ change=0.241) ($\beta = 0.154$) (Table IV). Finally, another variable for being a victim of dating violence was predicted. The results are similar to those verified for perpetration of dating violence. For this model, three explanatory variables with 30.8 per cent of total explained variance, were statistically significant: mother-to-child violence [$F(5,474) = 41.83$; $p = 0.000$] ($R^2=0.306/R^2$ change=0.056) ($\beta = 0.269$); father-to-mother violence [$F(4,475) = 39.63$; $p = 0.000$] ($R^2=0.250/R^2$ change=0.036) ($\beta = 0.249$), and mother-to-father violence [$F(3,476) = 43.37$; $p = 0.000$] ($R^2=0.215/R^2$ change=0.213) ($\beta = 0.131$) (Table IV).

Differences of psychological and physical aggression among siblings according to total parent-to-parent and parent-to-child violence

An ANOVA between groups was conducted to explore the impact of total parent-to-parent violence (mother-to-father/mother-to-father violence) on perpetration and victimization of psychological and physical violence between siblings. Subjects were divided in two groups according to the absence or presence of violence. The results shows that there was not a statistical effect on development of both cases: perpetrating or being a victim of sibling violence, respectively: in terms of psychological and physical violence [$F(1,574) = 0.484$; $p = 0.487$; $\eta^2=0.001$]/[$F(1,574) = 0.071$; $p = 0.790$; $\eta^2=0.000$] and [$F(1,574) = 0.710$; $p = 0.790$, $\eta^2=0.000$]/[$F(1,574) = 3.25$; $p = 0.072$; $\eta^2=0.006$] (Table V).

Regarding, total parent-to-child violence (mother-to-child/father-to-child) the ANOVA shows statistically significant differences in the development of psychological and physical aggression on being a victim of sibling violence [$F(1,580) = 7.24$; $p = 0.007$, $\eta^2=0.012$]/[$F(1,580) = 6.82$; $p = 0.009$; $\eta^2=0.012$], respectively, and in both cases (psychological and physical aggression) there are superior levels of aggression when compared with the absence of aggression (Table V). The same happens for the development of perpetration of sibling violence (psychological and physical aggression), respectively, [$F(1,580) = 6.70$; $p = 0.009$; $\eta^2=0.013$]/[$F(1,580) = 24.59$; $p = 0.000$; $\eta^2=0.041$], and the level of aggression is also higher than the absence of aggression (Table V).

Table IV Hierarchical multiple regression analyses predicting perpetration and victimization of dating violence

	R^2	R^2 change	B	SE	β	$Sig.$
<i>Step 1</i>						
Gender	0.002/0.001	0.002/0.001	-0.002/-0.011	0.038/0.036	-0.002/-0.012	0.956/0.760
<i>Step 2</i>						
Number of siblings	0.002/0.002	0.000/0.001	-0.006/0.000	0.016/0.015	-0.014/0.000	0.073/0.984
<i>Step 3</i>						
Mother-to-father violence	0.243/0.215	0.241/0.213	0.174/0.136	0.064/0.061	0.154/0.131	0.007/0.025
<i>Step 4</i>						
Father-to-mother violence	0.280/0.250	0.038/0.036	0.172/0.151	0.035/0.033	0.260/0.249	0.000/0.000
<i>Step 5</i>						
Mother-to-child violence	0.342/0.306	0.061/0.056	0.222/0.193	0.046/0.043	0.285/0.269	0.000/0.000
<i>Step 6</i>						
Father-to-child violence	0.342/0.307	0.000/0.001	-0.011/0.029	0.046/0.43	-0.014/0.040	0.810/0.465
<i>Step 7</i>						
Perpetrated sibling violence	0.343/0.307	0.001/0.000	-0.007/0.028	0.047/0.045	0.0137/0.059	0.890/0.535
<i>Step 8</i>						
Victim of sibling violence	0.343/0.308	0.001/0.001	0.031/-0.033	0.048/0.015	0.062/-0.071	0.514/0.472

Table V One-way ANOVA between total parent-to-child violence/total parent-to-parent violence and psychological and physical aggression between siblings

	1. Psychological aggression participant-to-sibling		2. Absence psychological aggression participant-to-sibling		3. Psychological aggression sibling-to-participant		4. Absence psychological aggression sibling-to-participant		5. Physical assault participant-to-sibling		6. Absence physical aggression participant-to-sibling		7. Physical assault sibling-to-participant		8. Absence physical assault sibling-to-participant		Direction of significance
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	
Total parent-to-child violence	0.49	0.56	0.28	0.40	0.49	0.53	0.27	0.40	0.54	0.59	0.29	0.38	0.49	0.56	0.29	0.40	1 > 2; 3 > 4; 5 > 6; 7 > 8
Total parent-to-parent violence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Non-sig.

Differences in psychological and physical aggression on dating, according to total sibling violence

A one-way ANOVA was also carried out for total sibling violence (subject-to-sibling; sibling-to-subject) and results show a statistical effect on the development of perpetrated psychological and physical aggression on dating [$F(1,587) = 16.49$; $p = 0.000$; $\eta^2 = 0.027$]/[$F(1,587) = 15.88$; $p = 0.000$; $\eta^2 = 0.026$], respectively, and in both cases (psychological and physical aggression) there are higher levels of aggression when compared with the absence of aggression (Table VI). There were also statistically significant differences on the development of being a victim of dating violence (psychological and physical aggression), respectively, [$F(1,587) = 13.17$; $p = 0.000$; $\eta^2 = 0.022$]/[$F(1,587) = 18.88$; $p = 0.000$; $\eta^2 = 0.031$], and the level of aggression is also higher than the absence of aggression (Table VI).

Discussion

Several research reports (Gelles and Straus, 1988; Roscoe *et al.*, 1987) have indicated sibling abuse as the most common form of family violence. Results from this study show that violence among siblings is relatively common (more than two-thirds of the sample report psychological and physical aggression). Regarding the others forms of violence, namely parent-to-parent, parent-to-child and dating violence, the results are also worrisome. The family setting should be a place of love and nurturing, the opposite of violence. But any combination of family members' violence can turn a home into a chaotic, disruptive place (Herron *et al.*, 1994).

More than half of the participants reported witnessing a parent's psychological aggression, and were victims of some kind of psychological aggression and physical assault, respectively, by their father. The results permit us to conclude that among the participants all forms of relationship violence are prevalent; however, psychological aggression was the most prevalent one, experienced and perpetrated. Because psychological violence is not a primary focus of violence prevention, it can cause poor outcomes and may predispose victims to other forms of violence (Forke *et al.*, 2008). The results show that the occurrence of different forms of family violence are common, being consistent with previous studies (Finkelhor *et al.*, 2005; Richmond *et al.*, 2009) which have found that participants who experienced one form of childhood victimization were at risk of experiencing other forms of violence. As Krienert and Walsh (2011) defend, other forms of family violence may aggravate sibling altercations causing an increased likelihood of overall violence and increase the risk of violence later in life.

Evidence suggests that young infants can be affected intensely by exposure to this trauma of witnessing parental violence than previously believed (Osofsky, 2004). Several studies (Finkelhor *et al.*, 2005, 2007) argue that to better understand childhood victimization, clinicians and researchers should study different types of violence rather than a single one in isolation.

The prediction of sibling violence (perpetrated or victimized), described in models of hierarchical multiple regressions suggest a significant role of parent-to-child violence on sibling violence. These results are similar to those found by several authors (Noland *et al.*, 2004; Simonelli *et al.*, 2002). Those put in evidence the quality of early relationships with parental figures as an important factor in how the subjects experience their relationships with siblings. It is clear that children of parents who avoid physical and psychological aggression as tactics for problem solving are more able of creating positive images such as deserving care and affection, and extending that to sibling relationships.

Gender is also a significant predictor of sibling violence. Males reported higher scores in perpetration of sibling violence. Although the literature is inconclusive regarding which gender experienced more sibling violence, some studies (Eriksen and Jensen, 2009; Noland *et al.*, 2004) found a higher prevalence of male sibling violence. Leder (1993) argues that society builds expectations and creates a role which is too hard for boys, so they should be more aggressive and competitive than girls.

Table VI One-way ANOVA between total violence between siblings and psychological and physical assault in dating relationship

	1. Psychological aggression participant-to-dating		2. Absence psychological aggression participant-to-dating		3. Psychological aggression dating-to-participant		4. Absence psychological aggression dating-to-participant		5. Physical assault participant-to-dating		6. Absence physical assault participant-to-dating		7. Physical assault dating-to-participant		8. Absence physical assault dating-to-participant		Direction of significance
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	
Total sibling violence	1.26	0.92	0.945	0.88	1.37	10.07	1.06	0.85	1.38	1.07	1.04	0.84	1.28	0.92	0.95	0.88	1 > 2;3 > 4; 5 > 6;7 > 8

Regarding dating violence prediction, results show significant levels of mother-to-child violence as a factor of major importance. We believe that the subjects who maintained a close bond with the maternal figure internalized personal patterns for dealing with anxiety, which seems to have implications on perpetration and victimization of dating violence. However, but not linearly, we believe that observation and learning of conflicting relational patterns in parent-to-parent and parent-to-child relationships may be used by subjects in other relationships, including siblings and dating partners (Bandura *et al.*, 1961).

The ANOVA (one-way) showed that results were not statistically significant between witnessed parent-to-parent violence and perpetration or being a victim of sibling violence (psychological and physical aggression), corroborating earlier results. It is somewhat surprising, however, that this finding is in agreement with a Noland *et al.* (2004) study which showed that parent-to-parent violence have a low impact on sibling violence. It seems possible that these results are due to the existence of some protective factors, namely the need for mutual support and companionship in order to manage the experiences of interparental aggression. This may make sense in siblings closest in age, with similarity and reciprocity of experiences, as well as in siblings with significant age differences, where the oldest sibling can have a moderate role on violent families (Gass *et al.*, 2007).

On the other hand, parent-to-child violence seems to have the greatest impact on sibling violence (psychological and physical aggression). Indeed, direct violence from parents toward a child seems to give the young internal insecure models, so integrating a negative role of self and others may lead to a significant difficulty in future relationships, and accepting their aggressiveness as a normal pattern of conflict resolution. Finally, the results from the last one analyze the relation between sibling violence and perpetration or victimization on dating relationship. The results are consistent with what would be expected from sibling relationships because experiences among siblings were considered as the first social laboratory, enabling children and young people to internalize patterns of conflict resolution. Sibling violence seems to make a difference in how individuals develop their relationships in a romantic context, bringing their experience to this early stage. On dating relationships the younger ones have the opportunity to repeat relationship experiences of maltreatment, and repeat the role of the victim or as perpetrator of violence (Wekerle and Wolfe, 1999).

It is relevant to emphasize the importance of building healthy relationships among the primary figures of affection while facilitating a positive adaptation and development of personal skills. Although not an implicit causality, results show that the experiences of early relationships guided by aggression (whether with parents or siblings) reflect differences in how subjects are able to meet their difficulties.

This study has several limitations. The use of retrospective reporting is not always a reliable assessment, although it has been used in others studies (Wiehe, 1997). Moreover, college students may not be representative of the population as a whole. Because all the measures used a self-reporting format, the results are dependent on participant's perceptions of the facts. Another limitation was the lack of information regarding the context of the reported violence. It is not possible to know whether the reported violence was an offensive or defensive behavior. However, these events or motivations did not legitimize the perpetrated violence. Finally, although multiple hierarchical regressions were used to test the relevance of predicting violence variables, the data were collected at a single point in time; therefore, the results cannot provide proof of actual causal relationships.

Despite these limitations, the results of the study are important as the first steps in exploring the Portuguese experience of co-occurrence of different forms of violence, indicating the need for increased attention to this problem. Further investigation is needed to better understand sibling violence, its real extension, and the consequences for its victims, perpetrators and families. A better understanding of sibling violence can also contribute to a better and broader knowledge of other forms of family violence and how they are related.

Implications for practice

- Researchers, practitioners and public awareness to the phenomenon of sibling violence as a form of violence in the family context.
- Development of educational campaigns that alert to this phenomenon.
- On exploration of family violence, the phenomenon of sibling violence should also be addressed.
- Elaboration of prevention and intervention programs focused on the development of pro-social skills, especially directed to school children.
- Development of parenting skills programs.
- Empower parents to recognize, but especially to prevent violence between siblings (identifying possible signs of sibling violence).
- It is necessary the development of rehabilitation programs for young offenders and support programs for victims.
- More information is needed regarding other samples (clinical, related to justice, entrusted to the care of the state) and with different ages.
- Since different forms of violence seem coocorrer, more research is needed. The evaluation of this co-occurrence may contribute to a better knowledge and understanding of the phenomenon of violence in the family context.
- Development of longitudinal studies to evaluate the consequences of sibling violence in dyads fraternal.

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