

Early maladaptive schemas as mediators between child maltreatment and dating violence in adolescence

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Abstract *This study investigated the association between exposure to child maltreatment and dating physical violence in the affective-sexual relationship among adolescents (n = 397, 14-19 years). A mediation model was conducted to determine whether these associations can be mediated by early maladaptive schemas (EMS), from the Schema Therapy's theoretical approach. Also, it sought to verify the invariant model by gender. The results showed that teen dating violence perpetrators with a history of child maltreatment had significantly higher scores in the perpetration of intimate violence than adolescents with no history of maltreatment. Disconnection and rejection realm schemas were mediators between exposure to child maltreatment and dating physical violence in adolescence, and this model was adequate to females. The clinical implications of these findings were also discussed.*

Key words *Childhood maltreatment, Intimate partner violence, Dating violence, Schema therapy*

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Introduction

Teen dating violence encompasses a variety of abusive behaviors, including acts of physical, psychological, and sexual violence within a context of current or past romantic relationships among preteens, adolescents, and young adults¹. This study seeks to emphasize the physical perpetration in adolescent “making out” and dating relationships investigated from the “Conflict in Adolescent Dating Relationships Inventory” (CADRI)². The category of physical violence in this instrument includes situations of assault that include slapping, beating, kicking, punching, shoving, pulling hair or using objects to harm the other (throwing something against someone).

Studies indicate that dating physical violence prevalence is high and diverse in different countries, depending on the method and conception of violence adopted. The prevalence ranged from 5.9% in Portugal³, 14.8% in South Korea⁴ and 24.3% in Spain⁵. The international multicenter study developed by Straus⁶, including 31 universities in 16 countries, recorded 29% physical perpetration in university student relationships. A systematic review of the literature indicated that 25% of girls and 13% of boys (aged 13-18 years) perpetrated physical violence in their intimate relationships⁷. A similar prevalence was observed in some countries for studies that used CADRI as a measure of investigation of dating physical perpetration. For example, a study with 918 adolescents in the USA indicated that 19.8% had engaged in physical violence⁸. In another study with 729 university students in Mexico, physical perpetration was 16.6%⁹. In Brazil, a multicenter study of 3,205 adolescents aged 15-19 years from ten capitals indicated a perpetration rate of 24.1%¹⁰.

Previous studies indicate that exposure to childhood maltreatment is a significant risk factor for the occurrence of teen dating violence¹¹⁻¹⁴. A study with 2,541 university students (USA) showed that 26.5% of adolescents with a history of childhood maltreatment perpetrated violence in their intimate relationships¹⁵. In another study with young South Koreans females who had been victims of physical abuse during childhood showed that they were 2.11 times more likely to perpetrate dating violence compared to young females who did not suffer abuse⁴.

Maltreatment has been described as part of the phenomenon of intergenerational transmission of violence, in which children exposed to these types of stressors in the family context

experience and perpetrate violence in adulthood, repeating the patterns of interpersonal interaction learned in childhood¹⁵. Studies have adopted the Theory of Social Learning¹⁶ to explain the relationship between these variables. However, limitations have been pointed out in these studies, since not all adolescents exposed to intrafamily violence perpetrate violence in their intimate relationships¹⁷.

Current studies have indicated that the effect of exposure to childhood maltreatment would not be direct, but that there would be different cognitive and emotional variables acting as mediators of this relationship. For example, beliefs about acceptance of violence¹⁸, anger management and psychological symptoms derived from childhood trauma¹⁹ have been described as mediating variables^{14,20}. In a study with Spanish adolescents, family violence was associated with perpetration of dating violence, and part of this association was mediated by beliefs that justified dating violence and by grandiosity cognitive schemas²¹. On the other hand, in a study with Mexican adolescents¹⁹, the lack of anger management and greater acceptance regarding the use of violence mediated the relationships between interparental conflict and perpetration of dating violence.

A study with young Koreans indicated that both boys and girls exposed to child abuse are at higher risk of becoming perpetrators of dating violence²². However, some results indicate that the gender variable must be managed. For example, boys who suffered childhood maltreatment developed a greater acceptance of violence, while girls developed empathy capacity impairments¹⁴. Therefore, the way maltreatment influences the prediction of teen dating violence is mediated by different factors and by gender, which justifies investigating the model's invariance.

In order to advance the understanding of how intra-family violence in childhood can contribute to the perpetration of dating violence, this study seeks to adopt the theoretical assumptions of Schema Therapy^{23,24}. In this theory, the Early Maladaptive Schemas (EMS) play an essential role, which can be understood as significant self-defeating, change-resistant and dysfunctional emotional and cognitive patterns associated with a negative self-perception of the environment²³. EMS develop during childhood and are developed throughout life, and they are the result of the child's innate temperament interacting with early experiences with parents and caregivers. In the later stages of the life cycle, schemas

are activated by environmental events relevant to the scheme, such as, for example, conflicts with the individual's interpersonal relationships²⁴. Unmet basic emotional needs in early childhood and continued patterns of painful experiences, such as childhood maltreatment, are described as the primary sources of EMS development²³⁻²⁵. Studies have pointed to a significant association between childhood maltreatment and EMS^{26,27}.

Eighteen EMS were identified by the Schema Therapy and are grouped into five schema realms, corresponding to the child's developmental needs²⁵. The first realm is named Disconnection and Rejection and is associated with the basic need for security, emotional stability, care, feeling of connection and acceptance. When these basic emotional needs are not met satisfactorily, the individual is likely to develop the Abandonment/Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame, and Social Isolation/Alienation schemas. The second realm is Impaired Autonomy and Performance. The family of origin tends to be overprotective, entangled and with difficulty in developing the autonomy of the child²⁴. People with schemas in this realm tend to have difficulty perceiving themselves as autonomous and independent²⁵. The EMS of Dependence/Incompetence, Vulnerability to Harm or Illness, Enmeshment/Undeveloped Self, and Failure to Achieve underlie this realm. The third realm is that of Impaired Limits, characterized by a lack of internal limits, difficulty in recognizing the rights of others and in establishing commitments or defining and fulfilling realistic personal goals²⁸. The typical family is permissive, indulgent, or overly critical and punitive²⁵. The EMS of this realm are Entitlement/Grandiosity and Insufficient Self-Control/Self-Discipline. The fourth realm is the Direction to Others, characterized by excessive concern with the needs of others, at the expense of their needs²⁴. The EMS of this realm are Subjugation, Self-Sacrifice, and Approval-Seeking/Recognition-Seeking. The fifth realm is named Excessive Surveillance and Inhibition and is associated with the fulfillment of rigid internal rules at the expense of happiness and the spontaneous expression of feelings. The typical family is severe, punitive, and rigid²⁴. The EMS of this realm are Negativity/Pessimism, Emotional Inhibition, Unrelenting Standards/Hypercriticalness and Punitiveness.

Research has pointed out the presence of the Disconnection and Rejection realm schemas in adolescents and adult women victims of childhood maltreatment and intimate violence. In the

adolescent population, an association between family violence and perpetration of dating violence was observed in a longitudinal study with Spanish adolescents, indicating that the EMS in the Disconnection and Rejection realms can act as mechanisms by which childhood violence is transmitted intergenerationally²⁸. In the adult population, previous studies have shown an association between intimate partner violence and EMS in adult women, especially regarding the role of Disconnection and Rejection realm schemas²⁹⁻³¹. These different studies indicate that EMS may be one of the cognitive factors associated with the interaction between childhood violence and intimate violence.

In Brazil, few studies have investigated the profile of EMS in adults with a history of conjugal violence^{30,32}. The patterns of mistrust/abuse, defectiveness/shame, social isolation were significantly associated with the group of adults with a history of marital violence when compared to another group without marital violence³⁰. In another study, with adults aged 22-74 years, the patterns of mistrust/abuse, dependence/incompetence, enmeshment and grandiosity were related to perpetration of marital violence³².

Again, in the Brazilian context, studies have pointed out the association between intrafamily violence and the perpetration of physical and psychological violence in teen dating^{33,34}. However, these studies do not investigate which cognitive variables can influence the perpetration of teen dating violence. This study aimed to investigate the association between EMS and the perpetration of adolescent dating physical violence. The hypothesis proposed is that exposure to childhood maltreatment contributes to the occurrence of adolescent dating physical violence, and EMS can play the role of mediators in this association. We also sought to investigate whether the model is invariant for female and male adolescents. Also, the patterns of perpetrating dating violence by gender and the presence of maltreatment throughout childhood were investigated. The difference in EMS scores was also investigated for the presence or absence of a history of childhood maltreatment.

Methods

Participants

A cross-sectional and retrospective study included 525 adolescents (58.5% female), aged 14-

19 years. Data were collected in eight public and two private high schools, in the cities of Porto Alegre and Novo Hamburgo, Rio Grande (RS). Most schools were public (66.8%), two schools were private (14.9%) and one school was a professional school (18.3%). The inclusion criteria were: to be a high school student; to be between 14 and 19 years of age (considering that a greater frequency of love relationships among young people is observed during this stage of adolescence); and having already had or being in a romantic relationship in adolescence ("making out" or dating).

Instruments

The following self-reporting instruments were used:

Sociodemographic data questionnaire: to evaluate individual characteristics (age, gender, schooling, alcohol and other drugs use), family members (with whom they lived, the presence of conjugal violence among parents, drug use by relatives) and current or past sexual-affective relationships.

Inventory of Conflicts in Adolescent Dating (CADRI)^{2,35}: which assesses the presence and frequency of abusive behavior in sexual-affective relationships in adolescence. The instrument consists of 70 questions and is answered on a four-point Likert scale, ranging from 0 (never) to 3 (always, more than six times). CADRI investigates the following violence categories: Physical Violence (4 items), Verbal/Emotional Psychological Violence (10 items), Psychological Violence/Threats (4 items), Relational Psychological Violence (3 items), and Sexual Violence (4 items). In this study, we used the total sum of the items of the sub-scale of perpetrating dating violence. In the study of the Brazilian version³⁵, the Alpha for the violence suffered and perpetrated was 0.87 and 0.88, respectively. In the current research, Cronbach's Alphas ranged from 0.87 for violence perpetrated to 0.90 for violence suffered.

The Portuguese-Brazilian version of the Schema Questionnaire for Adolescents (QEA)^{36,37}: which evaluates the 18 early maladaptive schemas, using 52 items, presented non-consecutively, on a six-point Likert scale (1 = *It has nothing to do with what happens to me* to 6 = *That's exactly what happens to me*). The total score of each EMS is calculated by the mean of the sum of the items underlying the schema in question. In the Brazilian sample, the internal consistency varied between $\alpha = .63$ for the Entitlement/Grandiosi-

ty scheme and $\alpha = .88$ for the Failure to Achieve schema³⁷.

*Inventory of Exposure to Childhood Domestic Violence (IEVII)*³⁷: This instrument was developed by the authors to retrospectively investigate the exposure of adolescents to situations of childhood abuse perpetrated by parents or primary caregivers. The IEVII consists of 19 items, which are answered using a four-point Likert scale (0 = *never* and 3 = *always*), which evaluate four types of child maltreatment: 1) Physical abuse; 2) Psychological abuse/abandonment; 3) Sexual abuse; and 4) Neglect. The items were created from the literature on child abuse^{38,39}, and three experts in the area were invited to be judges. Subsequently, a pilot study was conducted with 15 adolescents from a public school to evaluate the semantic content of the items for the adolescent public. In the current survey, the Alpha of the overall scale was 0.84.

Procedures

This study followed the ethical guidelines for human research, as per Resolution N° 510/2016 of the National Health Council. The application was collective, in the schools themselves, with an average duration of one hour. The adolescent participation in the study was voluntary, after initial rapport in which the objectives of the study were presented. The Informed Consent Form was requested (for the parents of adolescents under the age of 18 years and the adolescents themselves above 18 years of age), as well as the assent of the adolescents. In the data collection sessions, one member of the research team assisted in completing the questionnaires. This study was approved by the Psychology Ethics Committee of the Federal University of Rio Grande do Sul.

Data analysis

A description of the patterns of perpetrating dating violence was initially carried out. The adolescents who scored more than or equal to one point in the CADRI scores were considered perpetrators. Regarding the group of exposure to childhood maltreatment, adolescents with scores greater than or equal to one point in the IEVII total score were considered. From these results, the sample was divided into three groups: G1 – dating violence perpetrators and childhood maltreatment victims; G2 – dating violence perpetrators and non-victims of childhood maltreatment; and G3 – non-perpetrators of dating violence. A simple frequency analysis of child-

hood maltreatment by gender was performed for G1 adolescents. A t-test was performed to verify the difference in CADRI scores by group (G1 and G2) and to investigate gender differences in IEVII scores. In this study, a confidence interval of 95% for effect size was used, and the magnitude was classified as: 0.20-0.49 = small; 0.50-0.79 = moderate; and > 0.80 = large⁴⁰.

Regarding the EMS, ANOVA was performed, followed by a Tukey post hoc test, to investigate differences in the EMS scores between the groups (G1, G2 and G3). The mean scores of the items of each EMS were used to calculate the mean (weighted points). Also, a t-test was performed to examine whether there was a difference in EMS by gender.

Concerning the mediation model⁴¹, we used the total IEVII score, the physical perpetration CADRI score and the sum of the weighted scores of the EMS of the Disconnection and Rejection realm. Thus, we attempted to test a model of mediation in which exposure to childhood maltreatment (independent variable X) directly and indirectly affects the perpetration of violence in the affective-sexual relationships in adolescence (dependent variable Y), and this relationship may be mediated by the presence of EMS of the Disconnect and Rejection realm (mediating variable M). Several models (with the five realms proposed by Jeffrey Young^{23,24}) were tested, and the only significant and adequately adjusted mediation model was that including childhood maltreatment, perpetration of dating physical violence, and the EMS of Abandonment/Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame and Social Isolation, which theoretically underpin the Disconnection and Rejection realm (Mediator Variable). The choice of this model was theoretically based on international studies on the association between childhood maltreatment, Disconnection and Rejection EMS and intimate violence^{28,29}.

The mediation model was performed with the Lavaan⁴² package, with Maximum Likelihood (ML) estimator in the R environment (R Development Core Team)⁴³. The model adjustment indicators used were the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). The model is adjusted when TLI and CFI show values above 0.90, RMSEA, values below 0.08, and SRMR, values below 0.10⁴⁴. Multiple groups were also analyzed to investigate model invariance, by gender.

Results

From the general sample ($n = 525$), 75.62% ($n = 397$) of the adolescents were characterized as perpetrators of violence in the affective-sexual relationships in adolescence, of which 60.70% ($n=241$) were female and 39.30% ($n=156$) males. Three groups were then established as per the scores on the instruments (CADRI and IEVII), as described below:

Group 1 (G1) - Adolescent perpetrators of violence in adolescent affective-sexual relationships and childhood abuse victims: 288 adolescents ($n = 167$ females, 58.0%; $n = 121$ males, 42.0%), with a mean age of 16.71 years ($SD = 1.14$). Regarding the type of affective-sexual relationship experienced at the time of the research, 67% of the adolescents were dating and 31.9% “making out” with someone. In this group, 100% of the participants reported having been a victim of psychological violence/threats, 89.6% of physical violence, 46.2% of neglect and 6.9% of sexual abuse. About 58.8% reported witnessing verbal assaults among parents, 7.5% witnessed physical violence and 5.4% threats.

Group 2 (G2) - Adolescent perpetrators of violence in adolescent affective-sexual relationships and non-victims of childhood maltreatment: 109 adolescents ($n = 74$ females, 67.9%; $n = 35$ males, 32.1%), with a mean age of 16.54 years ($SD = 1.30$). At the time of data collection, most of the adolescents were dating (73.1%) and 26.9% had a “making out” relationship.

Group 3 (G3) - Adolescents non-perpetrators of violence in adolescent affective-sexual relationships: 128 adolescents ($n = 66$ females, 51.6%; $n = 62$ males, 48.4%), with a mean age of 16.52 years ($SD = 1.20$). In this group, adolescents were also exposed to childhood maltreatment, but at a lower frequency than G1 adolescents. Thus, 81.3% reported having suffered psychological violence, 71.1% physical violence, 28.0% negligence and 3.0% sexual abuse. At the time of the survey, 60.4% of adolescents reported dating and 39.6% were “making out” with someone.

Table 1 describes patterns of perpetrating violence in affective-sexual relationships, as measured by CADRI, for G1 and G2 (with and without a history of maltreatment in childhood). In general, a difference was found between groups, albeit with small effect sizes, showing that G1 adolescents perpetrated higher rates of violence in their affective-sexual relationships when compared to G2 adolescents, except for relational violence.

No significant difference was found in the IEVII scores, by gender, for the group of adolescent perpetrators of dating violence (G1, Figure 1).

The ANOVA results indicated the presence of a significant difference between the three groups in the EMS scores (Table 2). Tukey's post hoc test showed a significant difference in the EMS of Abandonment between G1 and G3 ($p = 0.024$). The EMS of Mistrust/Abuse evidenced a significant difference between G1 and G3 ($p = 0.001$) and between G1 and G2 ($p = 0.01$). There was a significant difference only between G1 and G2 for the EMS of Defectiveness/Shame ($p = 0.033$), Social Isolation ($p = 0.043$) and Emotional Deprivation ($p = 0.004$).

The Entitlement/Grandiosity EMS showed a significant difference between G1 and G2 ($p = 0.014$) and between G1 and G3 ($p = 0.001$). Both the EMS of Insufficient Self-Control ($p = 0.05$) and Unrelenting Standards ($p = 0.024$) showed only a difference between G1 and G2. The EMS of Approval-Seeking evidenced a difference between G1 and G2 ($p = 0.013$) and between G1 and G3 ($p = 0.004$). Finally, the Negativity/Pessimism EMS showed a difference between G1 and G2 ($p = 0.005$) and between G1 and G3 ($p = 0.001$). In general, these results indicate that perpetrators with a history of maltreatment tend to have significantly higher means in the EMS of Abandonment, Mistrust/Abuse, Defectiveness/Shame, Social Isolation, Emotional Deprivation, Entitlement/Grandiosity, Unrelenting Standards, Approval-Seeking and Negativity/Pessimism.

We investigated the difference in the EMS scores, by gender (G1). Female adolescents had significantly higher scores in the EMS of Abandonment ($M = 4.40$, $SD = 1.33$, $t = 3.93$, $df = 395$, $p = 0.001$) than male adolescents ($M = 3.86$, SD

$= 1.30$). In the same direction, female adolescents had a higher mean in the EMS of Mistrust/Abuse ($M = 3.44$, $SD = 1.35$, $t = 2.14$, $df = 395$, $p = 0.033$) than the male adolescents ($M = 3.14$, $SD = 1.34$). The other EMS had no significant difference.

The theoretical model hypothetically elaborated for this study was confirmed by the mediation model (Figure 2). Childhood maltreatment (VI) was significantly associated with Disconnection and Rejection EMS (VM), $\beta = 0.39$; $z = 9.639$; $p = 0.001$. On the other hand, the EMS (VM) were significantly associated with the perpetration of dating physical violence (VD), $\beta = 0.17$; $z = 3.566$; $p = 0.001$. This indirect effect explains 15% of the variance in the perpetration of physical violence. The total direct effect of maltreatment (VI) on the dating physical perpetration (VD) was $ab = 0.064$ (Standard error = 0.02). The relationship between maltreatment and the perpetration of physical violence then lost its significance ($\beta = 0.08$, $z = 1.762$, $p = 0.08$). The overall model adjustment indicators were adequate: $\chi^2 = 109,362$; $p = 0.001$; CFI = 1.00; TLI = 1.00; RMSEA = 0.01 (90%CI, $p < 0.05$) and SRMR = 0.00.

Then, a simultaneous analysis of multiple groups was performed to verify whether the theoretical model is invariant between the female and male gender. In the adolescent sample, maltreatment (X) was also associated with the Disconnection and Rejection (M) realm schemas, $\beta = 0.39$; $z = 7.472$; $p = 0.001$. The mediator variable (EMS) was significantly associated with dating physical perpetration (Y), $\beta = 0.21$; $z = 3.585$; $p = 0.001$. The direct effect between maltreatment and perpetration of physical violence was $\beta = 0.08$; $z = 1.418$; $p = 0.10$. In the sample of male adolescents, again a significant relationship was found between exposure to maltreatment and

Table 1. Means and standard deviation of perpetration of dating violence, by group of adolescents with or without a history of maltreatment.

Categories of violence	Group 1 (n = 288)	Group 2 (n = 109)	t	P	d
	M/SD	M/SD			
Verbal/emotional violence	7.00(4.76)	5.36(4.27)	3.14	0.002	0.35
Physical violence	0.84(1.79)	0.50(1.28)	2.08	0.040	0.20
Sexual violence	0.79(1.13)	0.53(0.94)	2.32	0.020	0.24
Psychological violence/threats	0.68(1.44)	0.20(0.56)	4.81	0.001	0.38
Relational violence	0.24(0.76)	0.21(0.79)	0.29	0.776	0.04
Total CADRI perpetration	9.55(7.67)	6.81(6.24)	3.66	0.001	0.37

Note. CADRI = Conflict in Adolescent Dating Relationships Inventory; M = mean; SD = Standard Deviation; t = t-test; p = level of significance; d = effect size; G1 = adolescent perpetrators with a history of childhood maltreatment; G2 = adolescent perpetrators with no history of childhood maltreatment.

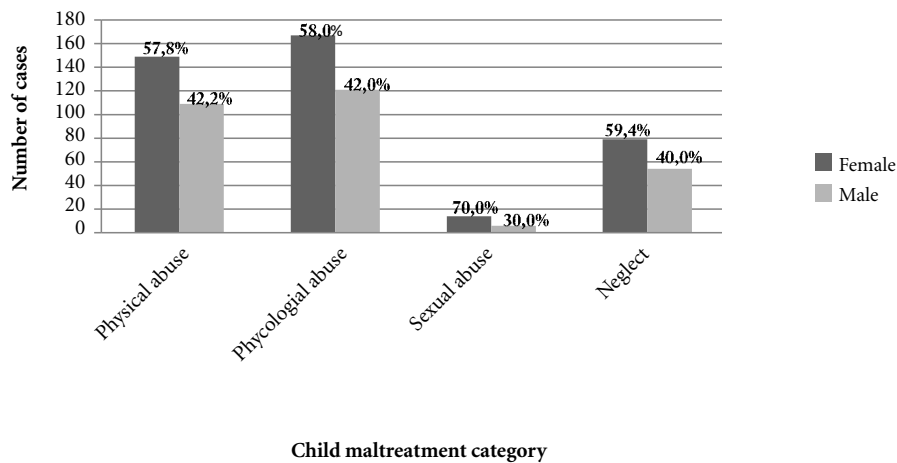


Figure 1. Frequency of maltreatment in adolescent perpetrators of dating violence (G1), by gender.

Table 2. EMS mean scores, by group (n = 525).

EMS	G1 (n = 288)	G2 (n = 128)	G3 (n = 129)	ANOVA	p
	M/SD	M/SD	M/SD		
Abandonment/instability	4.20(1.37)	4.16(1.28)	3.82(1.39)	F=3.60	0.028
Mistrust/abuse	3.46(1.36)	2.94(1.25)	2.67(1.17)	F=18.46	0.001
Emotional deprivation	2.15(1.34)	1.69(1.07)	2.02(1.34)	F=5.15	0.006
Defectiveness/shame	1.77(1.06)	1.47(0.88)	1.76(1.15)	F=3.39	0.034
Social isolation	2.33(1.38)	1.96(1.20)	2.17(1.49)	F=3.00	0.050
Dependence/incompetence	1.68(0.90)	1.54(0.85)	1.66(0.82)	F=1.06	0.347
Vulnerability to harm	2.66(1.41)	2.48(1.21)	2.49(1.39)	F=0.98	0.374
Enmeshment	2.76(1.41)	3.38(1.44)	2.92(1.40)	F=7.56	0.001
Failure to achieve	2.16(1.25)	1.83(1.24)	2.12(1.25)	F=2.77	0.064
Entitlement/grandiosity	2.17(1.06)	1.86(0.91)	1.75(0.82)	F=9.79	0.001
Insufficient self-control	2.42(1.18)	2.02(0.96)	2.19(1.16)	F=5.54	0.004
Subjugation	1.89(0.95)	1.75(0.86)	1.88-0.97	F=1.02	0.361
Self-sacrifice	3.77(1.27)	3.50(1.27)	3.48(1.31)	F=3.07	0.060
Approval-seeking	2.93(1.36)	2.54(1.17)	2.48(1.28)	F=7.23	0.001
Negativity/pessimism	3.32(1.43)	2.81(1.42)	2.70(1.45)	F=10.43	0.001
Emotional inhibition	3.07(1.30)	2.73(1.36)	3.01(1.46)	F=2.40	0.084
Unrelenting standards	3.56(1.48)	3.13(1.26)	3.24(1.45)	F=4.43	0.012
Punitiveness	2.31(1.26)	2.19(1.30)	2.16(1.14)	F=0.78	0.458

Note: EMS = Early Maladaptive Schemas; M = Mean; SD = Standard Deviation; F = Anova's result; p = level of significance; G1 = adolescent perpetrators with a history of childhood maltreatment; G2 = adolescent perpetrators with no history of childhood maltreatment; G3 = adolescents that are not perpetrators of dating violence.

the Disconnection and Rejection EMS, $\beta = 0.39$; $z = 6.193$; $p = 0.001$. However, the EMS of the Disconnection and Rejection realm were not significantly associated with physical perpetration, $\beta = 0.05$; $z = 0.671$; $p = 0.50$. The relationship

between maltreatment and physical perpetration was $\beta = 0.11$; $z = 1.476$; $p = 0.14$. Thus, the mediation model indicates that the role of EMS as a mediator of the relationship between exposure to childhood maltreatment and perpetration of

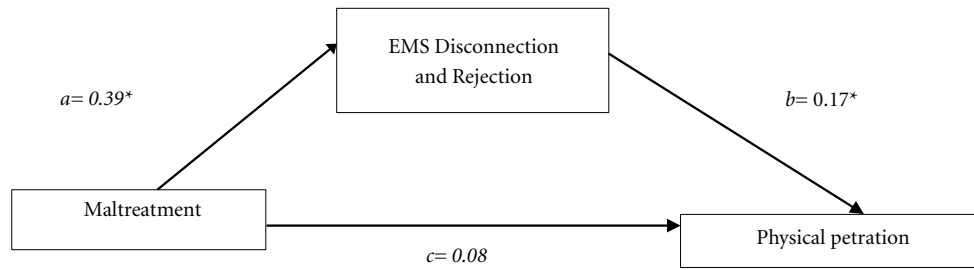


Figure 2. Model of mediation between exposure to childhood maltreatment and the perpetration of adolescent dating physical violence.

Note: * $p < 0.001$.

dating physical violence is relevant for girls but not for boys. This simultaneous model indicated adequate adjustment rates: $\chi^2 = 112.093$; $p = 0.001$; CFI = 1.00; TLI = 1.00; RMSEA = 0.01 (90%CI, $p < 0.05$) and SRMR = 0.00.

Discussion

This study examined the role of EMS as mediators of exposure to childhood maltreatment and the perpetration of dating physical violence. Adolescent perpetrators with a history of maltreatment had significantly higher scores in the CADRI than those without such history. This result shows, on the one hand, that childhood maltreatment can be considered a risk factor for an intergenerational model of violence; on the other hand, it reveals that other contextual factors are associated with the perpetration of dating violence, since G2 adolescents who did not suffer childhood maltreatment also perpetrated violence in their affective-sexual relationships. There is a consensus in the literature regarding the intergenerational violence in cases of teen dating violence^{11-13,15,20}.

The results also indicated that perpetrating adolescents with a history of maltreatment had higher scores in the EMS when compared to the other groups. One of the underlying assumptions of TE^{23,24} is that the origin of EMS is associated with experiences harmful to the emotional development of children and adolescents, including maltreatment. Previous studies have pointed to an association between childhood

maltreatment and the development of EMS, as well as an influence of EMS on the manifestation of psychopathological symptoms in adolescence^{13,21,26,27}. Dating violence perpetrators with a history of maltreatment had higher mean scores in the EMS of the Disconnection and Rejection realm, in the schemas of Entitlement/Grandiosity, Approval-Seeking, Insufficient Self-control, Pessimism and Unrelenting Standards. Such schemas can be understood both by the modes of maintenance confrontations, hypercompensation and avoidance of the EMS^{24,25}.

The mediation model investigated in this study confirmed the initial hypothesis. Childhood maltreatment was associated with Disconnection and Rejection EMS, which in turn were associated with the perpetration of dating physical violence. Thus, more than exposure to maltreatment per se, it is the association of maltreatment with the EMS of the Disconnection and Rejection realm that becomes an indirect predictor of the perpetration of dating physical violence. Such a total model can account for 15% of the variance in the perpetration of dating physical violence. A previous study²⁹ with women victims of intimate partner violence (Turkey) pointed out that the Disconnection and Rejection realm mediated the relationship between exposure to childhood maltreatment and being a victim of the intimate partner in adult life. A Brazilian study³⁰ found that the EMS of mistrust/abuse, defectiveness/shame, dependence/incompetence, subjugation and social isolation were more strongly itemized in the history of adult conjugal violence. In the population of adolescents perpetrating dating vi-

olence, the study by Calvete et al.²⁸ revealed that the dominance of Disconnection and Rejection contributed to the association between childhood maltreatment and teen dating violence.

In the current study, this model showed a variation by gender and was more valid for female adolescents. The justification for this result may be associated with the impact of childhood violence and the cognitive and emotional strategies adopted by girls. Studies have indicated that the impact of maltreatment and its association with dating violence may be different for boys and girls, considering that the socialization process and the impact of exposure to intrafamily violence vary by gender^{14,21}.

Conclusion

The results of this study support the theoretical propositions regarding the intergenerational transmission of violence, expanding its vision since it includes the EMS as a relevant variable for the understanding of the mechanisms by which this transmission takes place. In this study, the Disconnection and Rejection EMS were characterized as mediators of the association between childhood maltreatment and the perpetration of dating physical violence in adolescence. Also, adolescents with a history of child maltreatment perpetrated more dating violence than adolescents who were not victims of maltreatment in childhood.

Perpetrators of dating violence scored significantly higher in the EMS of the Disconnection and Rejection realm. Individuals with schemas in this realm believe that their basic emotional needs for care, security, stability of attachment and belonging will not be met²⁴. These issues are intertwined with early childhood experiences,

influencing the way someone perceives, evaluates and establishes own intimate relationships²⁴. Adolescents who have suffered childhood maltreatment may carry with them the schemas of this realm, believing they will be abandoned, exploited, humiliated, and remaining in abusive intimate relationships may be a way of avoiding the emotional distress associated with the activation of such EMS.

This study has some limitations. It is a cross-sectional research using self-reporting tools, in which adolescents may have responded according to social desirability standards. A gender bias was found in the sample, with a more significant number of girls, which may have influenced the results. Besides, girls are more open to discussing intimate issues, such as dating violence situations. The cross-cutting nature has in itself limitations concerning the causality relationship between the investigated variables. We suggest future research with a longitudinal design and studies that can investigate the emotional consequences of exposure to maltreatment (depression and posttraumatic stress, for example) as moderating variables of dating violence. Also, future studies may investigate the association of EMS in the formation of legitimizing beliefs of violence¹⁴ and styles of attachment⁴⁵ in adolescents perpetrating dating violence who were exposed to child maltreatment.

Finally, the results of this study may contribute to clinical implications. Early and preventive interventions are required among the young population, especially those with a history of family violence in childhood because they become a group at risk for violence between dating couples. Clinical interventions within the Schema Therapy approach can use mental imaging strategies of limited reparentalization and cognitive restructuring²⁴ to modify dysfunctional schemas.

Collaborations

JL Borges worked on the research design, data collection, analysis and interpretation and writing the article. DD Dell'Aglio worked on the research design, data analysis and the final review of the article.

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