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# Cyber Dating Violence: patterns of prevalence and risk factors in a sample of Italian adolescents

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Cyber Dating Violence (CDV) is a growing concern in the digital age, posing significant risks to adolescents' well-being. However, more research needs to be conducted on the phenomenon, especially within the context of Italian youth. This study aims to fill this gap by exploring CDV's prevalence and risk factors among an Italian sample of adolescents. One-hundred ninety-five high school students (36.4% female), with a mean age of 15.06 ( $SD = 1.24$ , range = 13–18), completed questionnaires measuring CDV, empathy, emotion regulation difficulties, school bullying, cyberbullying, and attitudes towards violence. More than 65% of students reported being victims of CDV, while about 64% have perpetrated such behaviors. Regression analyses showed that empathic affective dissonance, justification for female and peer aggression predicted CDV perpetration ( $F_{(11)} = 5.798$ ,  $p < 0.001$ ). Instead, CDV victimization was predicted by justification for female aggression and cyber-victimization ( $F_{(11)} = 4.963$ ,  $p < 0.001$ ). Furthermore, significant gender differences emerged concerning patterns of risk factors for CDV perpetration and victimization. Although we cannot generalize our findings to all Italian adolescents, our results further the understanding of CDV by providing evidence of a high prevalence rate among adolescents and identifying risk factors. CDV prevention research should explore interventions that address dissonant emotional empathy, attitudes toward violence, and violent behaviors. Our results enhance the understanding of CDV, stressing the need for early identification and targeted prevention programs that address and manage risk factors for CDV.

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## Introduction

In recent decades, there has been an enormous increase in adolescents' access to information and communication technologies (ICTs). Digital tools have significantly facilitated young people's socialization processes, romantic expressions, and interpersonal communication (Caridade et al., 2019), allowing self-expression and the development of new relationships (Hinduja and Patchin, 2021). Teenagers' methods of communication have significantly changed (e.g., chat and social networks) and are crucial components of their romantic bonds (Baker and Carreño, 2016; Mosley and Lancaster, 2019; Smith et al., 2018). Dating relationships constitute a developmental challenge during adolescence, potentially affecting growth trajectories (Lamb and Lerner, 2015). While positive relationships characterized by support and intimacy can promote positive development (Gómez-López et al., 2019), many adolescents become entangled in conflictual and violent relationships, with detrimental effects on their overall well-being and emotional development (Taquette and Monteiro, 2019). In this regard, due to the rapid growth of ICTs, young people are increasingly exposed and vulnerable to the risks of digital interpersonal violence (Fernet et al., 2019), particularly in dating relationships (Branson and March, 2021). Cyber Dating Violence (CDV) refers to different forms of interpersonal aggression (i.e., psycho-emotional and sexual) occurring within the context of a romantic relationship through digital media, such as live chat, social networks, and emails (Caridade et al., 2019; Galende et al., 2020; Hinduja and Patchin, 2021; Lu et al., 2021; Martínez Soto and Ibabe, 2022).

CDV shares some similarities with face-to-face dating violence; however, to date, defining the phenomenon represents an ongoing challenge for researchers, as several labels have been adopted (e.g., *cyber aggression*, *online dating abuse*, *digital dating abuse*, *cyber dating abuse*), as well as different measurement instruments. Indeed, a recent systematic review identified 42 constructs and 20 multidimensional behavioral sets related to intimate abuse through technology (Rocha-Silva et al., 2021). In the present study, we will use the term CDV to broadly encompass a range of abusive behaviors and aggressive actions that take place within the context of dating relationships among adolescents perpetrated and suffered through digital means (Martínez Soto and Ibabe, 2022).

Several studies have highlighted the association and overlap between traditional forms of Teen Dating Violence (TDV) and CDV perpetration (Temple et al., 2016; Cava et al., 2020a; Lara, 2020; Hinduja and Patchin, 2021). However, evidence suggests that CDV may be an early risk factor for future violence in face-to-face relationships. In this regard, a recent longitudinal study found that CDV perpetration predicts both physical and psychological forms of in-person dating abuse (Lu et al., 2021), suggesting a concerning pattern of escalating abuse from the digital to the physical realm.

Although CDV is more prevalent among adolescents and young adults, with a severity peak between 16 and 17 years (Lara, 2020; Stonard, 2021; Thulin et al., 2022), prevalence rates varied markedly across studies and countries. This is mainly due to the absence of academic consensus about the CDV definition and methodological differences, such as retrospective time frames used, type of sample, and measures (e.g., Caridade and Braga, 2020). However, the available data suggest an overall prevalence of CDV perpetration of 24.0% and CDV victimization of 36.9% among adolescents, examining 74 independent samples from North America, Canada, Spain, China, and Italy (Li et al., 2023). More specifically, a recent study among adolescents found that almost half of the participants (44.1%) occasionally displayed cyber-control behaviors toward their partners. In comparison, 11.7% reported engaging in such behaviors more frequently (Cava

et al., 2020a). Data on gender differences in CDV perpetration and victimization have been somewhat inconsistent across different studies. In this regard, some studies did not find any gender differences in CDV involvement or reported mixed results (Caridade and Braga, 2020; Gilbar et al., 2023; Li et al., 2023), while others have shown significant gender differences in CDV (e.g., Reed et al., 2017). For example, Cava et al. (2020a) found that female adolescents report greater CDV victimization than their male counterparts. Such findings may vary due to several factors, including the specific definitions of CDV used, the cultural context of the study, and the sample characteristics.

Research has demonstrated the significant impact of CDV on individuals involved in violent relationships, which can be even more severe than offline aggression (Lu et al., 2021; Melander and Marganski, 2020). Experiencing CDV is widely associated with sleep problems, difficulties concentrating (e.g., Cava et al., 2020b), anger and hostility (Curry and Zavala, 2020), low self-esteem (Smith et al., 2018), anxiety symptoms and depression (Hinduja and Patchin, 2021), post-traumatic stress disorder (Lu et al., 2018), suicidal thoughts and attempts (Gracia-Leiva et al., 2020; Hellevik, 2019), and high-risk behaviors, such as sexual behaviors (Van Ouytsel et al., 2016) and substance use (Piolanti et al., 2023).

Despite its negative consequences and the complexity of the phenomenon of CDV, which could be affected by several individual, family, peer group, and school and community factors, to date, the associations between involvement in CDV (perpetration and victimization) and some individual dimensions such as involvement in bullying and cyberbullying, emotional dysregulation, empathy, and attitudes toward violence are still little explored. Additionally, even fewer studies have examined the role of these dimensions while considering potential gender differences.

**Peer aggressive behaviors.** Commonly studied as correlated to CDV, TDV, and other peer-aggressive behaviors such as school bullying and cyberbullying (Espelage et al., 2018; Muñoz-Fernández et al., 2023) increase the probability of CDV. Specifically, CDV perpetration and victimization are related to school bullying (Peskin et al., 2017) and cyberbullying (Borrajo et al., 2015b), which prevalence has been estimated to range between 10.4% and 22.4% for perpetration and between 17 and 33% for victimization (Eyuboglu et al., 2021). In particular, involvement in cyberbullying is a significant predictor of CDV perpetration (Cava et al., 2023).

**Emotion regulation.** Recent studies suggest that emotion regulation difficulties are strongly associated with CDV. Difficulties managing emotions have been consistently linked to aggressive behaviors (Roberton et al., 2012). A recent meta-analysis has demonstrated that the inability to perceive, use, understand, and regulate emotions is associated with various aggressive adolescents' responses (Vega et al., 2022). Specifically, maladaptive emotion regulation strategies have shown robust links with aggressive tendencies across multiple samples (e.g., Navas-Casado et al., 2023). Previous research has suggested that some forms of CDV perpetration may serve as a maladaptive emotion regulation strategy (e.g., Brem et al., 2015). Cyber-aggressors struggle to manage their emotions more (Segura et al., 2020). In this regard, Ortiz et al. (2015) found that emotion dysregulation positively predicted CDV perpetration 3 months later. However, little research has focused on examining emotion regulation as a predictor of CDV perpetration and victimization.

**Empathy.** Empathy has been identified as a critical factor in understanding and addressing aggressive online and offline behaviors (Vachon and Lynam, 2016). However, studies specifically focusing on the importance of empathy in CDV perpetration and victimization are relatively scarce. Research has shown that cyberspace's anonymity and distance can make it challenging for cyber-aggressors to fully grasp the emotional impact of their behavior on the victim. This can facilitate aggressive behaviors due to a lack of affective and cognitive empathy. Also, digital distance can contribute to increased disinhibition, a lack of remorse, and fear of social rejection for aggressive actions (Rodriguez-Hidalgo et al., 2018). For example, Hinduja and Patchin (2021) have demonstrated that cyber-aggressors show more significant empathy deficits because the use of new technologies prevents them from directly observing the immediate consequences of their behavior on the victim. Although both cognitive and affective empathy predicted the perpetration of cyber aggression (Del Rey et al., 2016), no studies have yet explored the association between the empathy dimensions (cognitive and both affective resonance and dissonance) conceptualized by Vachon and Lynam (2016) and CDV.

Vachon and Lynam (2016) proposed the existence of cognitive empathy and two components of affective empathy: affective resonance and affective dissonance (or anti-empathy). Affective resonance implies the ability to attune oneself to the feelings of others emotionally and is generally associated with prosocial and empathic behavior. Conversely, affective dissonance, characterized by the experience of a contradictory emotional response, such as sadism, contempt, and schadenfreude (e.g., deriving pleasure from the misfortune or pain of others or feeling annoyed by others' happiness), has emerged as a stronger predictor of aggression (Vachon et al., 2014). Empirical evidence has demonstrated a robust correlation between affective dissonance and the perpetration of aggressive and antisocial behaviors (Dryburgh and Vachon, 2019), hypothesizing that individuals with high affective empathy may utilize their capacity to feel and access the emotions of others to derive pleasure from their suffering through antisocial behavior, such as cyberbullying (Sorrentino et al., 2023a).

**Attitudes towards violence.** For instance, it has been found that adherence to romantic myths—beliefs about what is acceptable in romantic relationships that lead to the normalization, justification, and toleration of some abusive behaviors in romantic relationships—is directly linked to CDV perpetration (Borrajo et al., 2015a; Fernández-González et al., 2019; Caridade and Braga, 2020; Curtain and Glowacz, 2021; Linares et al., 2021). In addition, tolerant attitudes toward violence, such as sexism and justification of violence, are significantly associated with both CDV perpetration and victimization (Linares et al., 2021). Similarly, Villora et al. (2019) identified a positive association between the justification of violence in romantic relationships and CDV victimization, suggesting that students who consider violence towards a partner acceptable are more likely to become victims of all forms of CDV.

Furthermore, Cava et al. (2023) demonstrated that tolerant attitudes toward abuse mediate the relationship between beliefs in romantic myths and CDV victimization, with stronger associations found among female adolescents. This suggests that gender may influence the indirect pathways linking these constructs. These findings align with broader evidence that emphasizes the importance of understanding the attitudes that normalize abuse contribute to CDV dynamics. Moreover, Caridade et al. (2019), underlying the complexity of CDV dynamics, stressed the need for further research into factors associated with CDV, including

attitudes toward violence, to better address its prevalence and consequences.

In line with the international literature, the aforementioned risk factors seem to play a role in CDV behaviors. However, a literature shortcoming is that the majority of studies have focused on just one dimension of CDV (perpetration or victimization), making it difficult to understand better patterns of risk factors related to adolescents' involvement in CDV.

To this regard, the present study aims to implement explorative research on how the above-mentioned individual risk factors could be associated with the involvement in CDV perpetration and victimization, as well as investigate how such patterns of risk factors could differ between male and female adolescents. In particular, as far as we know, this is the first study investigating and testing a model that includes several individual risk factors for CDV perpetration and victimization, also considering the role of cognitive empathy, affective resonance, and affective dissonance. Moreover, considering international evidence suggesting gender differences in CDV prevalence (Gilbar et al., 2023; Li et al., 2023), exploring how such individual risk factors could predict CDV involvement across gender could be crucial to deepen our understanding of such a phenomenon.

In particular, we expect that significant risk factors for CDV perpetration were emotional dysregulation, affective dissonance and justification of violence towards males, females, or peers, school bullying, and cyberbullying.

Concerning risk factors for CDV victimization, we expect that CDV victims were more likely to be both bullied at school and online with higher levels of justification of violence towards males, females, or peers. Furthermore, we expect a different pattern of risk factors between male and female participants. In particular, we hypothesize that high levels of affective dissonance will be associated with CDV perpetration among females. At the same time, we expect that males involved in both school bullying and cyberbullying were more willing to perpetrate CDV, supporting a substantial continuity in the involvement of perpetrators in different violent behaviors. Lastly, we expect that both school victimization and cybervictimization predicted CDV victimization among females, confirming the poly-victimization theory (Finkelhor et al., 2007).

Despite its relevance and impact on individual well-being and developmental trajectories, there is a shortage of studies considering gender differences in the relationship between the above-mentioned individual risk factors and CDV perpetration and victimization, especially within the Italian context. This explorative study aims to contribute to increasing knowledge and research on individual dimensions and gender differences in CDV perpetration and victimization.

## Methods and materials

**Participants.** An a priori power analysis was conducted to estimate sample size (using Sample Size Calculator for Multiple Regression, Soper, 2025). We ran the power analyses for the more conservative analysis in the present research (i.e., multiple regressions). With an alpha = 0.005 and power = 0.80, the sample size necessary to detect a medium effect size ( $f = 0.25$ ) is approximately  $n = 78$ .

One hundred ninety-five students recruited from a public scientific high school in Southern Italy participated in the study. Out of them, 36.4% ( $n = 71$ ) were females. The mean age of the participants was 15.06 (SD = 1.24, range = 13–18) years. About 98% ( $n = 191$ ) indicated an Italian nationality.

Although the classes involved in the study were randomly selected, female participants were underrepresented in our sample. This may reflect the declining number of female Italian

students opting for scientific high schools (Ministero dell'Istruzione, [s.d.](#)).

Out of the sample, 58.5% (36.8% females) reported that they have had/have a relationship. 77.6% ( $n = 38$ ) students in a relationship indicated more than 1 month, while 22.4% ( $n = 11$ ) were engaged for less than 1 month.

**Procedure.** Our study has a cross-sectional design, and the high school was selected through the convenience sampling method. All students were invited to participate through a letter shared within the classroom platform. Students were enrolled in the study after parental written consent and individual oral assent. Students were asked to fill in a booklet of questionnaires through an online platform (Alchemer.com). The compilation took place in the school's IT room, taking 40 min, and under the supervision of research assistants. To protect the confidentiality, a unique code was derived for each participant in the study. All procedures followed the Declaration of Helsinki and its later amendments (World Medical Association, [2013](#)) and were approved by the Ethics Committee of the host institution.

### Instruments

**Cyber dating violence.** The Cyber Dating Violence Inventory (CDVI; Morelli et al., [2018](#)) is a 22-item scale assessing CDV perpetration (11 items, *"I wrote things via SMS/mail/Facebook just to make him/her angry"*) and victimization (11 items, *"He/she spread rumors about me via SMS/mail/Facebook"*). Participants reported the frequency of CDV behaviors over the last year on a 4-point Likert scale from 0 ("Never") to 3 ("Six times or more"). The measure demonstrated good psychometric properties (Morelli et al., [2018](#)). In the present study, Cronbach's alphas for perpetration and victimization were 0.82 and 0.83, respectively.

**Empathy.** The Affective and Cognitive Measure of Empathy (ACME; Vachon and Lynam [2016](#)) is a 36-item self-report measure evaluating the individual's ability to recognize and understand others' feelings, vicariously experience their emotions, and orient their behaviors according to the affective information. The ACME has three sub-scales: cognitive empathy refers to the ability to detect and understand emotional displays (12 items, *"I have a hard time reading people's emotions"*), affective resonance indicates an empathic concern and compassion (12 items, *"It makes me feel good to help someone in need"*), and affective dissonance refers to a contradictory emotional response (12 items, *"I think it's fun to push people around once and a while"*). Items are answered on a 5-point scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). For each sub-scale, items are summed. We recoded all items to have higher scores indicating lower empathy. The measure has demonstrated to be internally consistent, structurally reliable, and invariant across sexes (Vachon and Lynam [2016](#)). In the present study, the reliability coefficients were cognitive empathy = 0.87, affective resonance = 0.77, and affective dissonance = 0.86.

**Emotion regulation.** The Difficulties in Emotion Regulation Scale-18 (DERS-18; Victor and Klonsky, [2016](#)) is an 18-item self-report questionnaire assessing six dimensions of emotion regulation's difficulties: lack of emotional awareness (3 items, *"I pay attention to how I feel"*), lack of emotional clarity (3 items, *"I have no idea how I am feeling"*), non-acceptance of emotional responses (3 items, *"When I am upset, I feel guilty for feeling that way"*), difficulties engaging in goal-directed behaviors (3 items, *"When I am upset, I have difficulty concentrating"*), impulse control difficulties (3 items, *"When I am upset, I become out of control"*) and limited access to emotion regulation strategies

(3 items, *"When I am upset, I believe that wallowing in it is all I can do"*). Items are scored on a 5-point Likert scale from 1 ("Almost never") to 5 ("Almost always"), with higher scores indicating higher emotion dysregulation. The measure has sound psychometric properties (Victor and Klonsky, [2016](#)). In the current study, the overall alpha coefficient was 0.86.

**Bullying.** Fourteen items of the Olweus Bully/Victim Questionnaire (Olweus, [1996](#)) were used to assess school bullying and victimization experiences among school-aged children using a referential period of 6 months. Participants were asked to rate their experience of school bullying (7 items, *"I spread false rumors about him or her and tried to make others dislike him or her"*) and victimization (7 items, *"I was called mean names, made fun of, or teased in a hurtful way"*) on a 5-point scale ranging from 0 ("Never") to 4 ("Several times a week"). Items are summed to yield the school bullying and victimization scales. In the present study, Cronbach's alphas were 0.77 for school bullying and 0.78 for school victimization.

**Cyberbullying.** A 10-item questionnaire referring to the taxonomy developed by Willard ([2007](#)) was used to assess cyberbullying and cybervictimization in the past 6 months. Cyberbullying (*"Have you humiliated someone online by sending or posting cruel gossip, rumors, or other offensive materials about them?"*) and cybervictimization (*"Have you received online messages that made you afraid?"*) scales consist of 5 items each answered on a 5-point scale from 0 ("Never") to 4 ("Several times a week"). In the present study, the reliability coefficients were cyberbullying  $\alpha = 0.85$  and cybervictimization  $\alpha = 0.82$ .

**Attitudes towards violence.** Attitudes about Aggression in Dating Situations Scale (AADS; Slep et al., [2001](#)) is a 10-item self-report measure assessing the justification of physical dating aggression acts contextualized in specific situations. Participants are asked to rate their degree of agreement with each statement (i.e., situational aggressive behavior) using a 6-point scale from 1 ("Strongly agree") to 6 ("Strongly disagree"). The AADS has a three-factor structure: Justification of Female Aggression (4 items, *"Mark calls Tina a slut in front of their friends. Tina slaps him"*), Justification of Male Aggression (4 items, *"Peter gets really angry at Patti and slaps her when she threatens to break up with him"*) and Justification of Peer Aggression (2 items, *"John catches Janet flirting with Tyrone. John gets really mad and hits Tyrone for flirting with Janet"*). Lower scores indicate greater levels of justification towards aggression. The measure has demonstrated good psychometric properties (Slep et al., [2001](#)). In the present study, the Cronbach's alphas were 0.67 for Justification of Female Aggression, 0.69 for Justification of Male Aggression and 0.62 for Justification of Peer Aggression.

**Data analysis.** Descriptive statistics were conducted through the IBM Statistical Package for the Social Sciences (v.26; IBM Corp, [2019](#)). Means, standard deviations, and frequency were computed for all study variables. Correlation analysis was used to investigate the strength of the association between variables of interest. Next, on the sample of students who have had/have a relationship ( $n = 114$ ), we performed two linear regression analyses to determine if emotion dysregulation, attitudes towards violence, empathy dimensions, and experiences of school bullying and cyberbullying as victim and perpetrator predicted additional variance in CDV (perpetration and victimization) above and beyond gender and age. Additionally, gender differences in risk factors for involvement in CDV were analyzed separately for boys and girls using linear regression analyses.

## Results

**Sample characteristics.** Among the students who have had/have a relationship ( $n = 114$ ), 65.8% ( $n = 75$ ) have experienced online violent behaviors in dating relationships (victims), while 64.9% ( $n = 74$ ) have engaged in CDV (perpetrators). Out of the total sample ( $n = 195$ ), 50.3% ( $n = 98$ ) of participants reported at least one experience of school bullying as perpetrator in the past 6 months, while 68.2% ( $n = 133$ ) indicated that they had been victimized at least once. Regarding cyberbullying, 37.9% ( $n = 74$ ) of students reported they had been cybervictimized at least once in the past 6 months, and 23.1% ( $n = 45$ ) reported cyberbullying others. Exploring gender differences about aggressive behaviors, we found that male participants were more likely to engage in school bullying ( $t_{(183,766)} = -4.540$ ;  $p < 0.000$ ) and cyberbullying behaviors ( $t_{(173,345)} = -2.489$ ;  $p = 0.014$ ), while female adolescents were more likely to be cybervictimized ( $t_{(101,994)} = 2.576$ ;  $p = 0.011$ ). More details are reported in Table 1 and Table 2.

**Correlation analysis.** Table 3 reports correlations between the study's variables. All variables were correlated in the expected

<b>Table 1 Sample characteristics.</b>		
<b>N = 195</b>	<b>F</b>	<b>%</b>
Gender		
Males	124	63.6
Females	71	36.4
School bullying		
Bullying (at least once)	98	50.3
Victimization (at least once)	133	68.2
Cyberbullying		
Cyberbullying (at least once)	45	23.1
Cybervictimization (at least once)	74	37.9
Age	15.06	1.24
<b>N = 114<sup>a</sup></b>	<b>F</b>	<b>%</b>
CDV		
Acted (at least once)	75	65.8
Suffered (at least once)	74	64.9
CDV Cyber Dating Violence.		
<sup>a</sup> Participants who have had/have a relationship.		

<b>Table 2 Gender differences about violent behaviors.</b>				
	<b>M (DS)</b>	<b>t</b>	<b>df</b>	<b>p</b>
School Bullying				
Males	2.241 (3.16)	-4.540	183.766	0.000
Females	0.746 (1.40)			
School Victimization				
Males	3.174 (3.46)	0.38	193	0.970
Females	3.197 (3.58)			
Cyberbullying				
Males	0.725 (1.91)	2.576	101.994	0.011
Females	1.760 (3.05)			
Cybervictimization				
Men	0.879 (2.33)	-2.489	173.345	0.014
Females	0.295 (0.88)			
CDV Perpetration				
Males	3.424 (4.34)	1.294	113	0.198
Females	4.595 (5.18)			
CDV Victimization				
Males	2.904 (3.83)	1.084	68.200	0.282
Females	3.881 (5.06)			
CDV Cyber Dating Violence.				

**Table 3 Means, standard deviation and correlation matrix.**

	<b>1. CDV (Perpetration)</b>	<b>2. CDV (Victimization)</b>	<b>3. Emotion Dysregulation</b>	<b>4. Cognitive Empathy (ACME)</b>	<b>5. Affective Resonance (ACME)</b>	<b>6. Affective Dissonance (ACME)</b>	<b>7. Attitudes Females (AADS)</b>	<b>8. Attitudes Males (AADS)</b>	<b>9. Attitudes Peers (AADS)</b>	<b>10. School Bullying</b>	<b>11. School Victimization</b>	<b>12. Cyberbullying</b>	<b>13. Cybervictimization</b>
1. CDV (Perpetration)													
2. CDV (Victimization)													
3. Emotion Dysregulation													
4. Cognitive Empathy (ACME)													
5. Affective Resonance (ACME)													
6. Affective Dissonance (ACME)													
7. Attitudes Females (AADS)													
8. Attitudes Males (AADS)													
9. Attitudes Peers (AADS)													
10. School Bullying													
11. School Victimization													
12. Cyberbullying													
13. Cybervictimization													

\* $p < 0.05$ ; \*\* $p < 0.01$ .

**Table 4** Linear Regression analysis for Cyber Dating Violence (Perpetration).

Predictors	B	$\beta$	t	p	Model
Age	-1.113	-0.124	-1.327	0.188	$F_{(11)} = 5.798$
Gender	0.670	0.202	2.396	0.018	$p < 0.001$
Emotion dysregulation	0.019	0.061	0.675	0.501	$R^2 = 0.382$
Affective Dissonance	-0.106	-0.207	-2.027	0.045	Adjusted $R^2 = 0.316$
Attitudes Females	-0.219	-0.228	-2.453	0.016	
Attitudes Males	0.077	0.073	0.700	0.485	
Attitudes Peers	-0.413	-0.266	-2.807	0.006	
School Bullying	-0.128	-0.095	-0.853	0.396	
School Victimization	0.066	0.054	0.536	0.593	
Cyberbullying	0.186	0.104	0.968	0.335	
Cybevictimization	0.280	0.192	1.838	0.69	

**Table 5** Linear Regression analysis for Cyber Dating Violence (Victimization).

Predictors	B	$\beta$	t	p	Model
Age	-0.648	-0.067	-0.694	0.489	$F_{(11)} = 4.963$
Gender	0.476	0.133	1.530	0.129	$p < 0.001$
Emotion dysregulation	0.044	0.129	1.390	0.168	$R^2 = 0.346$
Affective Dissonance	-0.061	-0.111	-1.057	0.293	Adjusted $R^2 = 0.277$
Attitudes Females	-0.218	-0.209	-2.188	0.031	
Attitudes Males	0.009	0.008	0.078	0.938	
Attitudes Peers	-0.200	-0.119	-1.219	0.226	
School Bullying	-0.173	-0.120	-1.041	0.301	
School Victimization	0.237	0.180	1.738	0.085	
Cyberbullying	0.106	0.055	0.497	0.620	
Cybevictimization	0.344	0.218	2.029	0.045	

direction, except for CDV perpetration and victimization, which correlated neither with cognitive empathy nor affective resonance. Therefore, these variables were not included in subsequent analyses.

**Regression analysis: prediction of CDV.** According to correlation analysis results, in the first regression (Table 4), we included emotion dysregulation, affective dissonance, justification for female/male/peer aggression, school bullying, school victimization, cyberbullying, and cybevictimization experiences as predictors and CDV perpetration as the dependent variable while controlling for age and sex. The model was statistically significant ( $F_{(11)} = 5.798$ ,  $p < 0.001$ ), demonstrating that affective dissonance ( $\beta = -0.207$ ,  $p = 0.045$ ), justification for female ( $\beta = -0.228$ ,  $p = 0.016$ ), and peer aggression ( $\beta = -0.266$ ,  $p = 0.006$ ), predicted CDV perpetration, explaining 31% of the variance.

In the second regression model (Table 5), emotion dysregulation, affective dissonance, justification for female/male/peer aggression, school bullying, school victimization, cyberbullying, and cybevictimization were included as independent variables, and CDV victimization as the dependent variable. Age and gender were included as covariates. The model was statistically significant ( $F_{(11)} = 4.963$ ,  $p < 0.001$ ), demonstrating that justification for female aggression ( $\beta = -0.209$ ,  $p = 0.031$ ), and cybevictimization ( $\beta = 0.218$ ,  $p = 0.045$ ), predicted CDV victimization, explaining 27% of the variance.

**Gender differences in patterns of risk factors for CDV involvement.** Considering the crucial role of gender differences in involvement in CDV, separate regression models were tested for boys and girls regarding both CDV perpetration and victimization.

For girls, the analysis revealed that age ( $\beta = -0.188$ ,  $p = 0.027$ ) and affective dissonance ( $\beta = -0.279$ ,  $p = 0.005$ ) were predictors

of CDV perpetration, accounting for 43% of the variance. In contrast, the predictive risk factors for CDV perpetration among boys included school victimization ( $\beta = -0.218$ ,  $p = 0.048$ ) and cyberbullying ( $\beta = 0.319$ ,  $p = 0.046$ ) (see Table 6).

A different pattern of risk factors emerged concerning gender differences in CDV victimization (Table 7). For female participants, significant predictors of CDV victimization included age ( $\beta = -0.205$ ,  $p = 0.013$ ), affective dissonance ( $\beta = -0.185$ ,  $p = 0.047$ ), and school victimization ( $\beta = 0.244$ ,  $p = 0.014$ ). In contrast, for boys attitudes justifying female aggression ( $\beta = -0.246$ ,  $p = 0.011$ ) and school victimization ( $\beta = 0.336$ ,  $p = 0.004$ ) significantly predicted CDV victimization.

## Discussion

Advancements in ICTs have revolutionized how individuals connect, communicate, and interact. Social media platforms, messaging apps, and online dating websites have become integral parts of young people's lives, reshaping the landscape of social interactions and dating practices (Reed et al., 2016). However, it is essential to acknowledge that these advancements also create opportunities for the emergence of new forms of harassment, control, and abuse, expanding the digital footprint of individuals and providing more avenues for personal (violent) interactions. Despite CDV being a widespread phenomenon worldwide, data specifically focused on Italian youth remain scarce. Therefore, this study aimed to explore CDV behaviors among Italian adolescents. As far as we are aware, this is the first study to examine both CDV perpetration and victimization risk factors in Italy and investigate possible gender differences.

The overall prevalence of CDV perpetration and victimization in our sample was 64.9% and 65.8%, respectively, which was greater than recent international prevalence rates (Li et al., 2023) but still consistent with the substantial variability observed in previous studies (Caridade et al., 2019). Our results indicate that

**Table 6** Regression analyses for gender differences and Cyber Dating Violence (Perpetration).

Predictors	Females				Model	Males				Model
	B	$\beta$	t	p		B	$\beta$	t	p	
Age	0.443	0.188	2.254	0.027	$F_{(10)} = 7.435$	0.531	0.257	3.111	0.002	$F_{(10)} = 5.773$
Emotion dysregulation	0.012	0.036	0.385	0.701	$p < 0.001$	0.002	0.006	0.075	0.941	$p < 0.001$
Affective Dissonance	-0.175	-0.279	-2.920	0.005	$R^2 = 0.491$	-0.089	-0.192	-1.964	0.052	$R^2 = 0.375$
Attitudes Females	-0.123	-0.125	-1.213	0.229	Adjusted $R^2 = 0.425$	-0.058	-0.062	-0.701	0.485	Adjusted
Attitudes Males	-0.066	-0.052	-0.510	0.611		-0.037	-0.038	-0.372	0.711	$R^2 = 0.295$
Attitudes Peers	-0.420	-0.211	-1.917	0.059		-0.099	-0.068	-0.772	0.442	
School Bullying	-0.111	-0.058	-0.500	0.618		-0.034	-0.034	-0.271	0.787	
School Victimization	-0.027	-0.025	-0.248	0.805		0.187	0.218	2.005	0.048	
Cyberbullying	0.752	0.186	1.778	0.079		0.327	0.319	2.020	0.046	
Cybevictimization	0.250	0.202	1.765	0.081		-0.022	-0.018	-0.128	0.899	

**Table 7** Regression analyses for gender differences and Cyber Dating Violence (Victimization).

Predictors	Females				Model	Males				Model
	B	$\beta$	t	p		B	$\beta$	t	p	
Age	0.580	0.205	2.557	0.013	$F_{(10)} = 8.763$	0.444	0.174	1.981	0.050	$F_{(10)} = 4.042$
Emotion dysregulation	0.049	0.119	1.342	0.184	$p < 0.001$	0.009	0.022	0.247	0.806	$p < 0.001$
Affective Dissonance	-0.140	-0.185	-2.019	0.047	$R^2 = 0.532$	-0.039	-0.068	-0.659	0.512	$R^2 = 0.282$
Attitudes Females	-0.143	-0.120	-1.221	0.226	Adjusted $R^2 = 0.472$	-0.286	-0.246	-2.595	0.011	Adjusted $R^2 = 0.212$
Attitudes Males	-0.250	-0.163	-1.662	0.101		-0.082	-0.070	-0.640	0.523	
Attitudes Peers	-0.008	-0.003	-0.033	0.974		0.165	0.093	0.991	0.324	
School Bullying	0.062	0.027	0.243	0.809		-0.248	-0.203	-1.507	0.135	
School Victimization	0.320	0.244	2.511	0.014		0.353	0.336	2.907	0.004	
Cyberbullying	0.463	0.095	0.947	0.347		0.081	0.064	0.383	0.703	
Cybevictimization	0.307	0.206	1.876	0.064		0.242	0.161	1.053	0.295	

CDV is a common behavior among adolescents, and needs further exploration.

While intervention and prevention programs have been successfully developed and implemented to address school bullying and cyberbullying (Cantone et al., 2015), the same level of attention has not been achieved for CDV. Surprisingly, a recent review exploring universal CDV prevention programs identified only three programs effectively addressing the phenomenon (Galende et al., 2020). The high prevalence of CDV may be attributed to the few readily available intervention programs.

The significant prevalence of school bullying and cyberbullying strongly suggests the coexistence of different forms of violence in physical and virtual contexts and poly-involvement (Espino et al., 2022). For example, Yahner et al. (2015) found a concerning pattern of overlapping between aggressive behaviors and victimization experiences among youth. More than 10% of adolescents who engaged in or experienced CDV were also more likely to perpetrate or experience physical and psychological TDV and cyberbullying.

Our findings showed that, unlike school bullying and cyberbullying, no gender differences emerged concerning CDV prevalence. Although rates of CDV by gender are mixed, our results align with recent literature suggesting no evidence of gender differences in CDV (Gilbar et al., 2023; Li et al., 2023; Smith et al., 2018). However, given the recent emergence of studies on CDV and the lack of consensus on its definition and prevalence rates, further research is required to understand gender differences in CDV comprehensively, and include representative samples to make pertinent comparisons. Literature has proposed several risk factors for CDV, encompassing individual, relational, and contextual domains (Caridade and Braga, 2020). To the best of our knowledge, our study is the first to explore risk factors for CDV

perpetration and victimization among an Italian sample of adolescents. The first linear regression showed CDV perpetration was significantly predicted by affective dissonance and justification for female and peer aggression, above and beyond all other predictors. Our findings are consistent with previous research suggesting that affective dissonance is associated with various forms of aggressive behaviors and externalizing disorders (Vachon and Lynam, 2016). Speculatively, it could be hypothesized that individuals experiencing dissonant affective responses to others' emotions may exhibit an empathy deficit, increasing the likelihood of discharging aggressive behaviors. In this sense, vicariously experiencing a contradictory emotion may lead to harming others, unlike affective resonance, which increases prosocial behaviors (Pang et al., 2022). As an anti-empathy, affective dissonance may normalize violence and aggressive behaviors towards partners, especially in the virtual environment, as individuals may find it easier to disengage emotionally. Further confirming such an assumption, a recent study (Dryburgh and Vachon, 2019) demonstrated that affective dissonance correlated with all types of aggression and antisocial behaviors, while Davis et al. (2019) found that empathy buffers the trajectories to later TDV perpetration.

Coherently to the first regression, the second one, exploring risk factors for CDV victimization, showed that justification for female aggression predicted such experiences of victimization. Despite previous studies that have highlighted the relevance of attitudes justifying violence in traditional TDV (e.g., Hunt et al., 2022), only a limited number of studies have delved into the association with CDV. Our results, alongside other studies (e.g., Villora et al., 2019), support the role of justification of violence in explaining both the perpetration and victimization of violence against the partner in an online context. Furthermore, the

findings of our study seem to support the importance of different types of justification of violence in the prediction of distinct forms of CDV. Specifically, justifications for females' and peers' aggression were related to CDV perpetration, while only justification for female aggression predicted CDV victimization. These results are consistent with previous findings demonstrating that individuals with attitudes justifying violence toward a partner are more likely to experience CDV as victims or perpetrators (Villora et al., 2019). Borrajo et al. (2015a), for example, found that justification of aggression was significantly associated with a higher likelihood of direct aggression in online dating relationships, especially among female adolescents. Generally, justification of violence was related to greater perpetration and victimization experiences (Linares et al., 2021). Our result may be explained by legitimizing gender-based violence, which normalizes the use of violence under some circumstances, such as dating relationships (Eisner, 2021). Similarly, the significant effect found for the justification of peer aggression may be due to social norms that condone and justify violent attitudes as an effective method of conflict resolution within a relationship. However, justification of aggression as a function of the aggressor's sex needs further exploration, as justification for violence among youth has emerged as a prominent risk factor for both CDV perpetration and victimization (Cava et al., 2020a).

Lastly, CDV victimization was predicted by cybervictimization experiences. This aligns with previous studies demonstrating a strong association between cybervictimization and CDV victimization (Cava et al., 2020b). One possible explanation for this result could lie in the fact that experiencing victimization in one interpersonal context can increase the vulnerability to other forms of victimization, leading to an extended period of victimization over time, resulting in a situation of poly-victimization (Cava et al., 2021; Dierkhising et al., 2019).

The poly-victimization theory (Finkelhor et al., 2007), indeed, highlights the complex and interconnected nature of victimization, as it rarely occurs in isolation but tends to be followed by subsequent experiences of abuse in different domains. Individuals who have experienced victimization in one domain (i.e., physical abuse, sexual abuse, dating violence, or exposure to violence between parents or caregivers) are more likely to be targeted for victimization in other domains due to various risk factors and vulnerabilities and, in turn, are at greater risk for long-term behavioral problems (Davis et al., 2018).

The results concerning gender differences showed the existence of different patterns of risk factors for both CDV perpetration and victimization, suggesting that for boys, CDV perpetration appears to be more influenced by the continuity across various forms of violence. In contrast, emotional and relational factors play a more prominent role for girls.

Regarding both victimization and perpetration of CDV, age emerged as a shared predictor for boys and girls. This finding aligns with Espino et al. (2022), who demonstrated that while adolescents begin to engage in TDV and CDV during early adolescence, these behaviors intensify in late adolescence, where 22.8% of youth are poly-victims and 26.7% are poly-perpetrators. This period coincides with an expansion of dating experiences but also an increased involvement in school bullying and cyberbullying (Caridade et al., 2019; Pinto-Cortez et al., 2020). School victimization emerged as another shared risk factor linked to CDV victimization for both genders, while it was associated with CDV perpetration only among boys. Previous evidence indicates that adolescents reporting school bullying or school victimization are more likely to be involved in CDV (Van Ouytsel et al., 2017), suggesting that being exposed to one form of abuse increases the likelihood of involvement in additional forms of violence (Espino et al., 2022; Finkelhor et al., 2007).

Consistent with previous studies on aggressive behaviors (Dryburgh and Vachon, 2019; Sorrentino et al., 2023a), empathic affective dissonance emerged as another common predictor for both genders in CDV perpetration. Interestingly, dissonant affective empathy was also associated with CDV victimization only for girls. Although this finding was unexpected, we can speculate that due to the bidirectional nature of CDV, girls may report high levels of dissonant affective empathy as the result of being engaged in dysfunctional relationship dynamics characterized by mutual abuse. Conversely, for boys, justification of female violence—often shaped by gender stereotypes—emerged as a significant predictor of CDV victimization. This finding underscores the persistence of cultural norms that downplay the impact of violence perpetrated by girls (Ezell, 2021).

Lastly, CDV perpetration among boys was predicted by the involvement in cyberbullying, supporting the hypothesis of continuity in aggressive trajectories. This finding reflects the tendency of boys to replicate patterns of dominance and aggression learned in peer-group settings within their romantic relationships (Van Ouytsel et al., 2017; Muñoz-Fernández et al., 2023; Sorrentino et al., 2023b).

**Limitations and future directions.** Indeed, some limitations of the study warrant further discussion. First, it was cross-sectional, which makes it impossible to draw conclusions regarding the directionality of effects. Therefore, future studies should consider employing longitudinal designs to examine temporal and causal relationships between variables to address this limitation and strengthen the findings.

Second, the study relied on self-report measures that, while commonly used, are subject to certain biases, such as social desirability and memory recall issues. Additionally, the use of self-report measures may result in common method variance, potentially inflating the correlations between variables. Future research should include multiple data sources, such as reports from peers, parents, and partners, to improve the reliability and validity of the findings. Third, the study included a small sample of Southern Italian adolescents recruited from a single public school, which is not representative of Italian adolescents. The sample may not be diverse enough to capture the experiences of adolescents from different backgrounds and socio-economic statuses, limiting the generalizability of the findings to other regions or cultural contexts. Future research should aim to replicate the study with more diverse samples, including adolescents from different areas, cultural backgrounds, and socio-economic strata. Careful consideration of such limitations is crucial when interpreting the results, and future research with larger samples is recommended to enhance the generalizability and robustness of the findings. Fourth, the study uses CDV as a term encompassing a wide range of online abusive behaviors and aggressive actions within a relationship. Given the lack of scientific consensus about violence in online dating relationships, more studies are needed to explore the terminology and conceptualization of CDV, including various forms of aggression (e.g., psychological, verbal, emotional, relational, public harassment, sexual, relational, and threatening). Despite these limitations, the present study provides valuable preliminary evidence of the prevalence, risk factors, and gender differences in CDV perpetration and victimization in Italy.

**Implications.** Awaiting further research, our findings have research and clinical implications. The high prevalence rates of CDV underscore the necessity for an improved understanding of the phenomenon and a deeper exploration of its co-occurrence with other digital and face-to-face adolescent aggression

phenomena. Results of the present study highlight that affective dissonance, justification of violence, and cybervictimization are factors posing vulnerability to CDV victimization and perpetration. Such results pave the avenue for future studies exploring both protective and risk factors that, along with identifying possible mediating effects, may bring closer to a more in-depth understanding of this complex phenomenon. This opens up new perspectives for designing targeted interventions, specifically addressing distal and proximal factors to prevent or reduce CDV among adolescents and promote safer and more respectful online relationships among adolescents.

Furthermore, our findings underscore the significance of addressing tolerant attitudes towards abuse in the context of CDV. It is imperative for preventive intervention programs to incorporate components that raise young people's awareness about violence-accepting beliefs, romantic myths, and harmful gender stereotypes, both in face-to-face interactions and within the digital realm.

From a practical perspective, the alarming prevalence of CDV among youth (more than 60%) emphasizes the urgency of prevention efforts to identify abusive online behaviors at an early stage. Indeed, early recognition and intervention may defuse the escalation of violence and reduce its long-term impact on adolescents, promoting healthier relationship dynamics.

Moreover, our findings concerning gender differences underline the need to develop gender-sensitive interventions. Addressing dissonant emotional empathy could be a beneficial and promising avenue for clinicians and practitioners working with adolescents involved in CDV, especially with female perpetrators and victims. Most empathy-focused training programs emphasize enhancing empathy without adequately addressing its dissonant component (Dryburgh and Vachon, 2019), underscoring the necessity of integrating emotional, relational, and digital aspects into educational programs to prevent and address CDV effectively among adolescents. Addressing dissonant empathy and its gendered dynamics could offer new opportunities for interventions aimed at breaking cycles of violence, particularly within digital relational contexts.

## Conclusions

The present study aimed to investigate individual risk factors associated with CDV perpetration and victimization among Italian adolescents. The results identify affective dissonance and aggression justification as key predictors of both CDV victimization and perpetration, with affective dissonance emerging as a potential indicator of empathy deficits that may foster violent behavior in online relationships (Pang et al., 2022).

Although international studies (Gilbar et al., 2023; Li et al., 2023) have shown gender differences in the prevalence of CDV, this study found no significant gender disparities in CDV perpetration and victimization rates. However, our results highlight significant differences in risk factors associated with CDV for both sexes. Our findings indicate that CDV perpetration among boys is more strongly linked to the involvement in various forms of violence. At the same time, patterns of risk factors for CDV victimization in girls are primarily connected to relational and emotional aspects, suggesting the need for a deeper understanding of how gender expectations and emotional factors influence female adolescents' experiences of CDV victimization.

These results highlight the need for greater attention to the phenomenon, further exploring risk and protective factors for CDV, and considering gender differences to implement effective intervention and prevention strategies. Understanding risk factors associated with CDV is crucial in developing targeted, gender-sensitive prevention strategies to address and reduce its occurrence

among young individuals. Furthermore, the study aligns with emerging theories of poly-involvement, highlighting the need for interventions that recognize the cumulative nature of victimization experiences in different contexts (Cava et al., 2021; Dierkhising et al., 2019; Finkelhor et al., 2007; Humphrey and Vaillancourt, 2020; Leemis et al., 2018; Oriol et al., 2019; Smith et al., 2019).

## Data availability

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

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## Author contributions

Conceptualization: AS and SC, Data curation: AC, Formal Analysis: AC, Funding Acquisition: AS and SC, Investigation: AC and MS, Methodology: AS and AC, Supervision: AS and SC, Visualization: AC, Writing—original draft: AS, AC and MS, Writing—review & editing: AS, AC and SC. All authors read and approved the final manuscript.

## Competing interests

The authors declare no competing interests.

## Ethical approval

The present study is part of a broader research project that received approval from the Ethics Committee of the Department of Psychology at the University of Campania "L. Vanvitelli" on October 27, 2015 (protocol number 29). Subsequently, the research protocol was resubmitted to the Ethics Committee due to the inclusion of new measures that were not part of the original study. This revised protocol was approved on July 23, 2024 (protocol number 46).

## Informed consent

Written informed consent was obtained from the participants' legal guardians. Legal guardians were provided with clear information about the study's objectives, procedures, and participants' rights, highlighting the study's anonymous and voluntary nature, as well as the right to withdraw at any time without penalty. The consent covered participation in the study, the use of collected data for research purposes, and permission to publish the findings. Written informed consent from participants' legal guardians was collected between the end of February and the beginning of March 2023. Only minors whose legal guardians signed the informed consent were involved in data collection. Participants' oral consent was obtained before data collection to ensure their participation in the study. They were assured that their anonymity and confidentiality would be strictly protected, no personally identifiable information would be collected, and they could withdraw the online survey at any time.

## Additional information

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