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Dating violence among Portuguese emerging adults: psychometric properties of the conflict in Adolescent Dating Relationships Inventory – short form

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The Conflict in Adolescent Dating Relationships Inventory – Short Form (CADRI-S) was created as a concise, reliable, and valid self-report tool to assess healthy (non-abusive) and abusive conflict resolution strategies in adolescent romantic relationships. The instrument includes bidirectional questions to evaluate both victimisation and perpetration, as well as bidirectional violence in dating relationships (VDR). Despite these benefits, limited studies regarding its psychometric properties exist especially among samples of emerging adults. This study aimed to validate the CADRI-S in a Portuguese sample of 524 emerging adults. Confirmatory factor analysis (CFA) supports the five-factor model of the CADRI-S. The five-factor model of the CADRI-S revealed an acceptable fit. Internal consistency was good through the analysis of the mean inter-item correlations. Good to acceptable values for concurrent, criterion, convergent, and discriminant validity were found. The results indicate that CADRI-S is an effective, concise, and psychometrically reliable tool for assessing VDR perpetration and victimisation, and bidirectional VDR in emerging adults.

Keywords: violence in dating relationships (VDR); emerging adults; confirmatory factor analysis (CFA); factorial structure; psychometric properties; Conflict in Adolescent Dating Relationships Inventory – short form (CADRI-s); bidirectional violence.

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Introduction

Violence in dating relationships (VDR) is a form of intimate partner violence recognised as a serious public health issue due to its prevalence and damaging effects on young people's health and wellbeing (Vives-Cases et al., 2021). VDR is defined as any violent physical, sexual, psychological behaviour, and stalking behaviours towards a current or past partner (Caridade, 2016; Cava et al., 2020; Centres for Disease Control and Prevention (CDC), 2024; Tapia & Monzon, 2021). VDR may happen against both heterosexual and same-sex partners (Dank et al., 2014).

Emerging adulthood is a period of development that can range from late adolescence to mid-20s (Bleidorn & Schwaba, 2017; Kingery et al., 2020). It is characterised by a period of considerable exploration, instability, and identity formation, during which emerging adults seek independence from their parents. Experiencing greater autonomy at this stage is also accompanied by new challenges (such as financial stress, mental health issues,

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and decision-making pressures), and emerging adults may also experience a sense of ambiguity or uncertainty about their future, which can lead to anxiety or confusion (Arnett, 2000). These specificities may help to understand the context of violence in relationships during this developmental period (Grest et al., 2018). Furthermore, the dysfunctionality or abuse inherent in the formation of interactional patterns established during emerging adulthood will be important predictors for experiencing intimate partner violence in adulthood (Exner-Cortens et al., 2017).

In addition, exposure to violence within the family of origin has been consistently identified as a key risk factor for involvement in violent intimate relationships (e.g. Yang et al., 2026). Through social learning processes, individuals who grow up witnessing or experiencing violence may internalise maladaptive conflict resolution strategies, increasing the likelihood of both perpetration and victimisation in their own romantic relationships. This exposure can also contribute to the normalisation of violence, whereby abusive behaviours are perceived as acceptable or typical within intimate relationships (Capaldi et al., 2012). These mechanisms are particularly relevant during emerging adulthood, a developmental stage marked by the consolidation of relational patterns and beliefs about intimacy (Fincham & Cui, 2010). Consequently, the early and timely identification of situations of intimate violence in emerging adulthood constitutes a fundamental effort to interrupt the cycle of intergenerational violence and to promote healthy and positive relationships.

The early and timely identification of situations of intimate violence in emerging adulthood constitutes fundamental efforts to break the cycle of intergenerational violence and to promote healthy and positive relationships.

VDR in emerging adulthood

VDR in emerging adulthood is an epidemic problem (Carter-Snell, 2015), transversal to different cultures and ethnic groups (Caridade, 2018). Global estimates from World Health Organisation (Sardinha et al., 2024) found that among adolescent girls aged 15–19 years who have been in a relationship, nearly a quarter experienced physical and/or sexual intimate violence by the time they turn 20 years old. Almost one in six experienced this violence in the past year. Prevalence rates varied greatly across countries and regions, with lifetime prevalence ranging from 6% in Georgia to 49% in Papua New Guinea. In Europe, lifetime prevalence rates range between 10% in Central Europe to 18% in Western Europe and past year prevalence rates range between 4% in Central Europe and 6% in Eastern and Western Europe (Sardinha et al., 2024).

A meta-analysis by Wincentak et al. (2017) found that the overall prevalence of physical VDR perpetration was 20%, while sexual VDR perpetration was 9%. The review revealed that significantly more female adolescents reported physical violence towards their dating partners compared to males, whereas more males than females reported engaging in sexual VDR perpetration. In a systematic review VDR prevalence in Europe, Tomaszewska and Schuster (2021) found that the prevalence of psychological VDR victimisation ranged from 5.9% to 95.5% for females and 5.6% to 94.5% for males, while physical VDR victimisation ranged from 2.2% to 32.9% for females and 0.8% to 29.8% for males. The rates of sexual VDR victimisation were between 4.8% and 41% for females and 2.4% to 39% for males. Regarding perpetration, the prevalence of psychological VDR ranged from 7% to 97% for females and 19.9% to 95.3% for males, physical VDR from 2.1% to 46% for females and 4.8% to 37% for males, and sexual VDR from 0.8% to 23.6% for females and 1.6% to 43.6% for males. However, it is important to interpret prevalence rates with caution, as the measurement of VDR is not consistent across studies. As highlighted by Tomaszewska and Schuster (2021), different studies assess varying forms

of violence, with some focusing only on physical, sexual, and psychological abuse, while others include additional forms such as relational aggression, controlling behaviours, isolation, and cyber dating violence. These differences in operational definitions and measurement tools can lead to substantial variability in reported prevalence rates. Moreover, instruments differ in their sensitivity to capture more subtle or less visible forms of abuse, which are particularly common in adolescent and emerging adult relationships. Consequently, discrepancies in measurement approaches may contribute to the wide range of prevalence estimates reported in the literature (Caridade et al., 2019).

In Portugal, high rates of VDR have also been identified, both among adolescents and emerging adults (Neves et al., 2021; Neves et al., 2023; Magalhães et al., 2021). Data from a national sample of almost 5000 young people revealed that 58% have already suffered at least one behaviour of VDR in their lives (Magalhães et al., 2021), with 19% of girls and 34% of boys legitimising control behaviours and 4% of girls and 16% of boys legitimising sexual violence. In a sample of almost 4,400 college students, 53.8% have already suffered at least one act of dating violence, and 34.4% have already performed some violent act within an intimate relationship (Neves et al., 2021). Data from the Portuguese Dating Violence Observatory showed that, between 2017 and 2002, 93.4% of girls and 5.9% of boys reported experiencing VDR. Official Portuguese data show that, in 2023, 2,951 crimes in dating relationships were reported to the authorities, constituting 8.6% of all domestic violence offences (Sistema de Segurança Interna [SIS], 2024).

Despite the focus of much research on unidirectional violence, the literature indicates that bidirectional violence is the most common pattern in community samples (e.g. Machado et al., 2023). A study by Carranza et al. (2022), with a sample of university students, confirmed this pattern of bidirectional violence (VB), in 66.7% of the participants, with 23.9% and 21.7% reporting only perpetration and victimisation, respectively. A study conducted in Portugal with college students from 18 to 25 years old also revealed a similar pattern, with BV being the most prevalent form of violence (66.9%) and no significant sex differences being observed (Santiago et al., 2025). However, similar prevalence rates of perpetration between men and women should be interpreted with caution, as they may mask important differences in the nature and context of violent behaviours. Research suggests that women are more likely to report using violence in response to perceived threats, self-defence, or retaliation, whereas men's use of violence is more often associated with control and coercion (e.g. Bates, 2016; Caridade, 2011). Therefore, equivalent rates of perpetration do not necessarily reflect equivalent patterns, motivations, or consequences of violence within relationships.

Additionally, VDR in emerging adulthood is often associated with other risk behaviours (e.g. risky sexual behaviour, substance use, intimate partner violence in adulthood) and can have significant consequences for physical, psychological, and social wellbeing, including depression, anxiety, post-traumatic stress symptoms, poor academic performance, suicidal behaviours, increased risk of revictimisation, and, in severe cases, death (CDC, 2024; Jouriles et al., 2017; Taquette & Monteiro, 2019). Attitudes towards VDR have also been identified as important correlates of involvement in violent intimate relationships, particularly regarding perpetration (e.g. Cano-Gonzalez et al., 2022; Courtain & Glowacz, 2021). Individuals who view aggression as acceptable or justified within romantic relationships are more likely to engage in abusive behaviours and to tolerate violence in intimate interactions. Although the association between attitudes and victimisation is less direct, research suggests that the normalisation or acceptance of violence may reduce the recognition of abusive behaviours, increase

tolerance of unhealthy relationship dynamics, and contribute to greater vulnerability to victimisation (Caridade, 2011; Coker et al., 2014). These associations have been documented across diverse groups and appear to reflect broader social norms regarding the acceptability of VDR rather than being solely attributed to heterosexual gender dynamics. Although research examining attitudes towards VDR among sexual minority populations remains limited, existing evidence suggests that such attitudes are influenced by relational and social experiences across different relationship contexts (Ricks et al., 2023). Therefore, attitudes towards dating violence constitute a relevant construct for examining the convergent validity of measures assessing both perpetration and victimisation experiences. Given the complexity and variability of VDR, it is essential to use specific and brief measures with strong psychometric properties to accurately assess different forms and dynamics of violence in young people's relationships. Research on intimate violence has focused mainly on adult couples (Capaldi et al., 2012) and it was only in the 1981s, starting with the work undertaken by Makepeace, that studies began to emerge among younger people. The first instruments for investigating VDR were developed for the adult population (for example the Conflict Tactic Scale [CTS], Straus, 1979), later being adapted for younger people (M-CTS; Mrug et al., 2016). Indeed, different systematic reviews found that CTS and its different forms are amongst the most used measures to assess the prevalence of VDR (e.g. Rodríguez-deArriba et al., 2024; Tomaszewska & Schuster, 2021). However, research has shown that intimate violence among younger people has differentiating characteristics (in terms of duration, dynamics, and conflict resolution) from intimate violence in adults (Machado et al., 2014).

The need to adapt instruments assessing intimate violence among adults for use with a younger population led to the development of the Conflict in Adolescent Dating Relationships Inventory (CADRI) by David Wolfe et al. (2001). The CADRI was developed as a comprehensive measure of dating violence in adolescents, informed by existing measures, including the CTS and the Psychological Maltreatment of Women Inventory, as well as insights from frontline youth workers. It is a 46-item self-report questionnaire designed to evaluate both positive (or non-abusive) and abusive conflict resolution strategies in adolescent intimate relationships, with bidirectional questions assessing victimisation and perpetration. It can identify specific forms of abuse such as threatening behaviour, relational, physical, sexual, and emotional or verbal abuse. The fact that this instrument can capture more subtle forms of abuse that are more commonly found in dating relationships (e.g. threatening and verbal abuse) among young people is a positive aspect that differentiates it from other measures (Wolfe et al., 2001).

CADRI has been widely used to measure relational strategies (e.g. Rodríguez-deArriba et al., 2024; Tomaszewska & Schuster, 2021) and has been adapted and validated for use in several countries, including Spain (Fernández-Fuertes et al., 2008), Mexico (Pulido et al., 2012), the USA (Jouriles et al., 2005), Israel (Schiff & Zeira, 2005), Brazil (Antônio et al., 2012), and Portugal (Lucas et al., 2008; Saavedra et al., 2011). CADRI has been used with different population groups, including community individuals (Volz & Kerig, 2010), clinical and forensic populations (Wekerle et al., 2009), and at-risk groups (Fernández-González et al., 2013).

However, the instrument's length, poses some constraints when attempting to include other variables or measures in research protocols for a more complete analysis of the phenomenon. In response to this, Fernández-Fuertes et al. (2008) developed a short version of the CADRI containing only 10 items (two items for each CADRI subscale), referred to as the CADRI-S (cf. Windle & Mrug, 2009). Development work was carried out on the

CADRI-S, conducting multivariate studies (two studies; one with a sample of high school students and the other with a sample of at-risk youth) to obtain a rigorous and useful abbreviated tool (Fernández-González et al., 2012).

In the short form, the five-factor structure of the full form has been preserved. However, the reliability coefficients for the CADRI-S are lower than those from the complete version. Nevertheless, all coefficients present values around .70, which are considered acceptable, given the small number of items, and CADRI-S construct validity was also proven, using Confirmatory Factor Analysis (CFA). Furthermore, CADRI-S is a suitable instrument for research contexts, particularly as part of a broader battery of measures, and as a screening tool in clinical contexts, with a quick response time of three to five minutes (Fernández-González et al., 2012).

Current study

The need for a brief, simple, and adequate measure to assess VDR among emerging adults motivated the present study to validate the CADRI-S for the Portuguese context. Although originally developed for adolescents, the CADRI-S encompasses a broad range of behaviours applicable across different age groups and relational contexts, assessing both perpetration and victimisation across various forms of violence (physical, sexual, verbal/emotional, threatening behaviour). This study aimed to evaluate the measurement properties of the CADRI-S by assessing its internal consistency, as well as its convergent, discriminant, and criterion validity. This was achieved by examining its associations with related constructs, such as cyberviolence perpetration and victimisation scale and attitudes towards VDR, as well as exploring its factorial structure in a sample of emerging adults. Also, we aimed to examine the prevalence rates of VDR, the prevalence of bidirectional VDR, and the sex differences.

Method

Participants

The sample was recruited online, using a convenience sampling procedure and consisted of 524 participants from the community, with a mean age of 21.46 years ($SD = 2.02$), ranging from 17 to 25 years. Most of the participants were females ($n = 440$, 84.8%), single ($n = 507$, 96.9%), heterosexual ($n = 454$, 87%) and had either a bachelor's degree ($n = 241$, 46.4%) or a high school diploma ($n = 223$, 43%) (see Table 1).

Procedures

The CADRI-S was translated from English to Portuguese by two native Portuguese speakers fluent in English, and then back-translated into English by two independent researchers fluent in both languages. Any discrepancies between the versions were addressed until no semantic differences remained. The final Portuguese version was then tested with a group of Portuguese emerging adults to ensure clear understanding. Since the pilot study results were satisfactory, no additional changes were made to the CADRI-S.

The final version of the CADRI-S and the other instruments were uploaded to the Qualtrics platform. A link to the survey was shared via email and social media (e.g. Facebook, LinkedIn) to invite individuals aged 18 to 25 to participate in a 15- to 20-minute questionnaire. Participants were informed about the voluntary and anonymous nature of the study and provided their online consent. No financial compensation, or incentives were offered for participation.

The study was conducted between 2021 and 2022, adhering to all ethical guidelines established by Portuguese legislation. Ethical approval was obtained from the Ethics Committee of the Lusófona University.

Measures

Sociodemographic questionnaire

Sociodemographic data were collected using a questionnaire specifically developed for this

Table 1. Sample sociodemographic characterisation.

	N	%
Gender		
Male	79	15.2
Female	440	84.8
Marital Status[a]		
Single	507	96.9
Married/cohabitation	16	3.1
Educational Level		
9 years	3	0.6
High School	223	43
Post High School	21	4
Bachelor's degree	241	46.4
Master's degree	31	6
Sexual Orientation		
Heterosexual	454	87
Homosexual	14	2.7
Bisexual	41	7.9
Other	13	2.5

Note. [a]Participants who were in dating or non-cohabiting relationships were considered single.

study, which assessed age, gender, sexual orientation, education level, and marital status.

The conflict in adolescent dating relationships inventory – short form (CADRI-S, Fernández-González et al., 2012)

The CADRI-S is a self-report measure with 10 bidirectional questions (perpetrator/victim), evaluating five distinct forms of abusive behaviours that may occur between adolescent dating partners. Each subscale comprises two items, as exemplified: physical abuse (e.g. 'I slapped my partner or pulled my partner's hair'/'My partner slapped me or pulled my hair'), threatening behaviour (e.g. 'I threatened to hurt my partner'/'My partner threatened to hurt me'), sexual abuse (e.g. 'I forced my partner to have sex when he/she didn't want to'/'My partner forced me to have sex when I didn't want to'), relational abuse (e.g. 'I tried to turn my partner's friends against them'/'My partner tried to turn my friends against me'), and verbal/emotional abuse (e.g. 'I insulted my partner with put-downs'/'My partner insulted me with put-downs'). The response options for each item were categorised as follows: never (this has never occurred), seldom (this has occurred 1–2 times), sometimes (this has occurred approximately 3–5 times), and often (this has occurred 6 or more times). The validation studies provided initial evidence of the validity of the instrument, with acceptable reliability indices (Fernández-González et al., 2012). The internal consistency reliability statistics for the CADRI-S subscales will be presented later in this paper.

The conflict in adolescent dating relationships inventory (CADRI-P; Wolfe et al., 2001; Portuguese version Lucas et al., 2017)

The CADRI-P is a self-report measure adapted from the CADRI (Wolfe et al., 2001) which assesses the occurrence of violent behaviours during an intimate relationship and identifies the presence of non-violent behaviours. The CADRI-P includes two scales: one for negative (or abusive) conflict resolution strategies, with 36 bidirectional items covering physical, sexual, verbal-emotional, relational-

psychological, and cyberviolence behaviours; and one for positive (or non-abusive) strategies, with 10 items. The CADRI-P incorporates new items and adds a new subscale for cyberviolence, which was the only subscale used in this study. This subscale addressed the assessment of abusive intimate behaviours conducted through new technologies (e.g. mobile phones, social media) (e.g. 'I accessed their email without permission to view the sent or received correspondence'). This instrument showed good psychometric properties (Lucas et al., 2017). In the present study, the cyberviolence subscale also showed good psychometric properties ($\alpha = .75$ for perpetration and $\alpha = .78$ for victimisation).

Attitudes towards dating violence scales (ADVS; Price et al., 1999; Portuguese version Saavedra et al., 2017)

The ADVS is a self-report scale adapted from the Attitudes Towards Dating Violence Scale (Price et al., 1999). It assesses attitudes towards the use of psychological, physical, and sexual violence perpetrated by men and women in dating relationships. The scale contains 76 items, divided in six subscales: Attitudes towards Male Psychological Violence (AMDV-Psyc; 15 items) (e.g. 'A girl should always do what her boyfriend tells her to do'); Attitudes towards Male Physical Violence (AMDV-Phys; 12 items) (e.g. 'A boy can hit his girlfriend if she deserves it'); Attitudes towards Male Sexual Violence (AMDV-Sex; 12 items) (e.g. 'It's not wrong to pressure a girl into having sex'); Attitudes towards Female Psychological Violence (AFDV-Psyc; 12 items) (e.g. 'It's important for a boy to always dress the way the girl wants'); Attitudes towards Female Physical Violence (AFDV-Phys; 13 items) (e.g. 'Sometimes, a girl has to hit her boyfriend to make him respect her'); and Attitudes towards Female Sexual Violence (AFDV-Sex; 12 items) (e.g. 'To prove his love, a boy should have sex with his girlfriend'). The subscales have shown very good internal consistency ($\alpha = .77$, .81, .80, .79, .84, and .83, respectively) in the original version. In the present study, the Cronbach alphas ranged from .67 to .85 ($\alpha = .79$, .79, .67, .78, .85, .84, respectively).

Self-report questionnaire for measuring delinquency and crime (D-CRIM; Basto-Pereira et al., 2015)

D-CRIM is a self-report questionnaire that assesses 12 types of violent and non-violent criminal behaviours (e.g. theft, robbery, driving without a legal licence, domestic violence, sexual abuse, drug trafficking, homicide), perpetrated in the lifetime and in the last 12 months. The presence of these types of criminal behaviours is evaluated through 'Yes/No' questions. Based on the responses obtained through this questionnaire, criminal behaviour is categorised into six distinct groups: (a) non-violent criminal behaviours in the past 12 months; (b) non-violent criminal behaviours lifetime; (c) violent criminal behaviours in the past 12 months; (d) violent criminal behaviours lifetime; (e) total of criminal behaviours in the past 12 months; and (f) total of criminal behaviours lifetime. For the purposes of the present study, only the violent criminal behaviours in the past 12 months subscale was used. The original version of D-CRIM (Basto-Pereira et al., 2015) demonstrates adequate psychometric properties.

Data analysis

Descriptive statistics were used to characterise the sample. CFA was conducted using AMOS 29 software (Arbuckle, 2017) to evaluate construct validity. The fit of the CADRI-S was assessed using the following indexes: (a) χ^2/df (the ratio of chi-square to degrees of freedom) less than 2.0; (b) TLI (Tucker-Lewis Index) and CFI (Comparative Fit Index) greater than 0.90; and (c) RMSEA (Root Mean Square Error of Approximation) less than 0.10. Construct validity was further evaluated through Average Variance Extracted (AVE; $\geq$0.5 cf. Netemeyer et al., 2003) and

Composite Reliability (CR; ≥ 0.7 cf. Hair et al., 2010; Netemeyer et al., 2003).

Convergent validity was tested using Pearson correlation coefficient between the CADRI-S total scores and subscales, and the CADRI-P (cyberviolence perpetration and victimisation scale) and ADVS subscales, as previous research has demonstrated that the acceptance or legitimisation of dating violence is associated with greater involvement in violent intimate relationships (e.g. Cano-Gonzalez et al., 2022). Additionally, correlations between subscales were analysed to assess the discriminant validity of the CADRI-S subscales. A correlation value lower than .85 was considered indicative of discriminant validity (cf. Netemeyer et al., 2003). Discriminant validity was also evaluated using discriminant analysis based on participants' scores on the ADVS subscales. For concurrent validity, a receiver operating characteristic (ROC) curve was conducted to assess the ability of CADRI-S perpetration and victimisation scores to differentiate between the presence and absence of violent crimes. Internal consistency was evaluated though Cronbach's alpha (≥ .070; cf. Field, 2017) and the mean inter-item correlation (values ranging between .15-.50; cf. Domino & Domino, 2006). Test–retest reliability was assessed using Pearson's and intraclass correlation coefficients (ICC; ≥0.75; cf. Koo & Li, 2016). Finally, to examine sex differences, t-tests and qui-squared tests were performed. All analyses were conducted using IBM SPSS 28.

Results

Confirmatory factor analysis

Because the data violated the normality assumption, and in line with the methods used when testing the original version of CADRI-S, we applied robust maximum likelihood (ML) estimation. Robust ML is considered more suitable for categorical variables and distributions that do not meet the normality assumption, compared to other estimation methods (Bentler, 2005; Chou et al., 1991).

Table 2 illustrates the fit indexes of the factorial models for CADRI-S perpetration and CADRI-S victimisation. The analysis of the fit indices (except for χ^2/df for CADRI-S perpetration) revealed that both CADRI-S perpetration and CADRI-S victimisation were adequate. Table 3 presents the standardised factor loadings and item-total Pearson correlations of the CADRI-S perpetration and victimisation models. All item factor loadings were high (> .50) and significant ($p < .001$), except for items 1 (.468) and 5 for perpetration (.337) and item 1 (.446) for victimisation.

Convergent validity

Correlations between CADRI-S perpetration and CADRI-S victimisation total scores and subscales and CADRI-P online victimisation and perpetration and ADVS subscales are presented in Table 4 and 5. Regarding CADRI-S perpetration, statistically significant positive correlations were found between CADRI-S total score and all the variables, except AFDV-Sex. Physical abuse subscale was

Table 2. CFA for CADRI-S perpetration and victimisation.

Model	χ^2/df	CFI	TLI	RMSEA (90% CI)	AIC
CADRI-S P	3.155	.93	.90	.064 [.005-.079]	5238.802
CADRI-S V	1.94	.98	.97	.042 [.026-.058]	7475.670

Note. CADRI-S = Conflict in Adolescent Dating Relationships Inventory – Short Form; P = Perpetration; V = Victimisation; χ^2 – Chi-Square; df – degrees of freedom; CFI – Comparative Fit Index; TLI – Tucker-Lewis Index; RMSEA – Root Mean Square Error of Approximation; AIC – Akaike Information Criterion.

Table 3. Standardised factor loadings and item-total Pearson correlations of the CADRI-S.

Factors	CADRI-S Perpetration Loadings	CADRI-S Victimisation Loadings	ITC Perpetration	ITC Victimisation
Factor 1				
Item 7	.623	.751	.623	.556
Item 9	.765	.887	.646	.606
Factor 2				
Item 11	.585	.584	.367	.566
Item 13	.667	.953	.480	.458
Factor 3				
Item 17	.614	.646	.541	.534
Item 19	.828	.909	.509	.492
Factor 4				
Item 5	.337	.721	.553	.548
Item 15	.660	.560	.418	.491
Factor 5				
Item 1	.468	.446	.436	.518
Item 3	.833	.877	.504	.518

Note. CADRI-S = Conflict in Adolescent Dating Relationships Inventory – Short Form.

correlated with AMDV-Psyc and AMDV-Sex and AFDV-Psyc. Threatening behaviour subscale was correlated with CADRI-P victimisation and perpetration and AMDV-Psyc and AMDV-Sex and AFDV-Psyc. Sexual abuse subscale was correlated with only two subscales: the AMDV-Sex and AFDV-Sex. Relational abuse subscale was correlated with almost all variables except CADRI-P victimisation and AFDV-Sex. Lastly, verbal/emotional abuse subscale was correlated with CADRI-P (victimisation and perpetration), AMDV-Psyc and AFDV-Psyc and AFDV-Phys (see Table 4).

Concerning CADRI-S victimisation, statistically significant positive correlations were found between the CADRI-S total score and CADRI-P (victimisation and perpetration), AMDV-Psyc and AMDV-Phys, and AFDV-Psyc. The physical violence subscale also showed positive correlations with the following variables: CADRI-P victimisation, AMDV-Psyc, and AMDV-Phys. The threatening behaviour subscale was correlated with all variables except AFDV-Sex, while the sexual abuse subscale was not correlated with any variables (see Table 5). Lastly, the relational abuse subscale was correlated with four variables (CADRI-P victimisation; CADRI-P perpetration; AMDV-Phys; AFDV-Psyc, and the verbal/emotional abuse subscale was correlated with three (CADRI-P victimisation; CADRI-P perpetration; AMDV-Phys). It should be noted that not all subscales showed statistically significant correlations with the CADRI-P and ADVS, with some subscales displaying weaker or non-significant associations.

Discriminant and criterion validity

The CADRI-S perpetration and victimisation subscales were all correlated, except for verbal/emotional abuse victimisation and physical abuse victimisation (see Tables 4 and 5). All correlations were below .85 (cf. Netemeyer et al., 2003), indicating discriminant validity.

In addition, a discriminant analysis was performed to assess the instrument's ability to distinguish between participants who legitimised beliefs about male and female physical, psychological, and sexual violence and those

Table 4. Correlations between CADRI-S perpetration total and scales, CADRI-P perpetration and victimisation, and EAVN subscales.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.CADRI-S Total	1												
2. CADRI-S PA	.596***	1											
3. CADRI-S TB	.638***	.472***	1										
4. CADRI-S SA	.539***	.439***	.352***	1									
5. CADRI-S RA	.499***	.293***	.267***	.340***	1								
6. CADRI-S V/EA	.756***	.133**	.202***	.123**	.105*	1							
7. CADRI-P V	.285***	.071	.223***	.092	.094	.240***	1						
8. CADRI-P P	.403***	.089	.323***	.063	.169**	.347***	.636***	1					
9. AMDV-Psyc	.201***	.116*	.142**	.081	.170**	.113*	.108*	.175***	.1				
10. AMDV-Phys	.152**	.072	.096	.056	.167**	.084	.103*	.131**	.405***	1			
11. AMDV-Sex	.163**	.088	.122*	.098*	.129**	.084	.081	.142**	.393***	.328***	1		
12.AFDV-Psyc	.170**	.066	.116*	.051	.105*	.126*	.151**	.213***	.478***	.358***	.377***	1	
13. AFDV-Phys	.179***	.102*	.095	.090	.117*	.121*	.103*	.173***	.449***	.458***	.401***	.448***	1
14. AFDV-Sex	.084	.089	.012	.109*	.095	.023	.023	.087	.380***	.278***	.401***	.300***	.334***

Note. CADRI-S = Conflict in Adolescent Dating Relationships Inventory – Short Form; P = Perpetration; V = Victimisation; PA = Physical Abuse; TB = Threating behaviour; SA = Sexual Abuse; RA = Relational abuse; V/EA = Verbal/emotional abuse; AMDV-Psyc = Attitudes towards Male Psychological Violence; AMDV-Phys = Attitudes towards Male Physical Violence; ADMV-Sex = Attitudes towards Male Sexual Violence; AFDV-Psyc = Attitudes towards Female Psychological Violence; AFDV-Phys = Attitudes towards Female Physical Violence; AFDV-Sex = Attitudes towards Female Sexual Violence.
*$p < .005$; **$p < .01$; ***$p < .001$.

Table 5. Correlations between CADRI-S victimisation total and scales, CADRI-P perpetration and victimisation, and EAVN subscales.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.CADRI-S Total	1												
2. CADRI-S PA	.540***	1											
3. CADRI-S TB	.587***	.443***	1										
4. CADRI-S SA	.578***	.263***	.241***	1									
5. CADRI-S RA	.632***	.292***	.320***	.248***	1								
6. CADRI-S V/EA	.693***	.086	.159***	.133**	.206***	1							
7. CADRI-P V	.413***	.118*	.216***	.211***	.227***	.323***	1						
8. CADRI-P P	.306***	.065	.273***	.064	.112*	.292***	.636***	1					
9. AMDV-Psyc	.120*	.104*	.136**	.019	.068	.061	.108*	.175***	.1				
10. AMDV-Phys	.182***	.115*	.127*	.096	.098*	.104*	.103*	.131**	.405***	1			
11. AMDV-Sex	.090	.072	.145**	.013	.062	.026	.081	.142**	.393***	.328***	1		
12.AFDV-Psyc	.142**	.066	.113*	.051	.101*	.085	.151**	.213***	.478***	.358***	.377***	1	
13. AFDV-Phys	.070	.062	.114*	.035	−.013	.036	.103*	.173***	.449***	.458***	.401***	.448***	1
14. AFDV-Sex	.006	.029	.059	−.020	−.008	−.004	.023	.087	.380***	.278***	.401***	.300***	.334***

Note. CADRI-S = Conflict in Adolescent Dating Relationships Inventory – Short Form; P = Perpetration; V = Victimisation; PA = Physical Abuse; TB = Threating behaviour; SA = Sexual Abuse; RA = Relational abuse; V/EA = Verbal/emotional abuse; AMDV-Psyc = Attitudes towards Male Psychological Violence; AMDV-Phys = Attitudes towards Male Physical Violence; ADMV-Sex = Attitudes towards Male Sexual Violence; AFDV-Psyc = Attitudes towards Female Psychological Violence; AFDV-Phys = Attitudes towards Female Physical Violence; AFDV-Sex = Attitudes towards Female Sexual Violence.
*$p < .005$; **$p < .01$; ***$p < .001$.

who did not (see Table 6). Participants were categorised based on their scores in the ADVS subscales: those scoring at or above the 50th percentile were placed in the group that supports beliefs about violence, while those scoring below were placed in the group that did not. The results indicated that the prediction accuracy for CADRI-S perpetration ranged from 53.6% to 57.8%, demonstrating satisfactory predictive accuracy, except for the female sexual violence subscale. For CADRI-S victimisation, the ratio of the prediction accuracy varied between 54.3% and 57.1%, only revealing satisfactory discriminant capacity for male psychological and physical subscales and female psychological subscale.

The AVE and CR of each factor were calculated to further assess construct validity. The AVE values were satisfactory for all factors, both for perpetration and victimisation, meeting the threshold of .50 (Netemeyer et al., 2003). The AVE values for perpetration were as follows: physical abuse = .73; threatening behaviour = .69; sexual abuse = .75; relational abuse = .61; and verbal/emotional abuse = .69. For victimisation, the AVE values were: physical abuse = .83; threatening behaviour = .78; sexual abuse = .79; relational abuse = .70; and verbal/emotional abuse = .69. The CR, an indicator of internal consistency (Hair et al., 2010), was also above the recommended threshold of .70 for all factors, both for perpetration and victimisation (Hair et al., 2010; Netemeyer et al., 2003). The CR values for perpetration were: physical abuse = .84; threatening behaviour = .82; sexual abuse = .86; relational abuse = .76; and verbal/emotional abuse = .82. For victimisation, the CR values were: physical abuse = .91; threatening behaviour = .88; sexual

Table 6. Discriminant analysis: Individuals who hold attitudes about violence versus individuals who did not hold attitudes about violence.

	%	Λ
AMDV-Psyc (Top = 210; Bottom = 197)		
Perpetration	55.3	.959***
Victimisation	54.3	.986*
AMDV-Phys (Top = 213; Bottom = 194)		
Perpetration	53.6	.977**
Victimisation	55.0	.967***
AMDV-Sex (Top = 214; Bottom = 192)		
Perpetration	56.2	.973***
Victimisation	54.7	.992
AFDV-Psyc (Top = 218; Bottom = 185)		
Perpetration	56.8	.971***
Victimisation	57.1	.980**
AFDV-Phys (Top = 223; Bottom = 180)		
Perpetration	57.8	.968***
Victimisation	55.3	.995
AFDV-Sex (Top = 227; Bottom = 176)		
Perpetration	56.3	.993
Victimisation	56.3	1.000

Note. CADRI-S = Conflict in Adolescent Dating Relationships Inventory – Short Form; AMDV-Psyc = Attitudes towards Male Psychological Violence; AMDV-Phys = Attitudes towards Male Physical Violence; ADMV-Sex = Attitudes towards Male Sexual Violence; AFDV-Psyc = Attitudes towards Female Psychological Violence; AFDV-Phys = Attitudes towards Female Physical Violence; AFDV-Sex = Attitudes towards Female Sexual Violence.
*$p < .005$; **$p < .01$; ***$p < .001$.

abuse = .88; relational abuse = .82; and verbal/emotional abuse = .82.

Concurrent validity

ROC curves were performed to evaluate the ability of the CADRI-S perpetration and victimisation to discriminate between individuals who reported committing violent crimes in the past 12 months and individuals who did not report committing crimes.

The CADRI-S perpetration showed a significant capability (AUC = .72, $p < .001$; 95% CI [.63; .80]) to discriminate between the two groups, as well as the CADRI-S victimisation, AUC = .69, $p < .001$; 95% CI [.60; .79] (see Appendix 1, supplementary material).

Reliability

Regarding internal consistency, Cronbach's alpha values for the perpetration and victimisation factors were generally low (Field, 2017), with the exception of physical abuse, threatening behaviour, and sexual abuse victimisation; perpetration – .64 for physical abuse, .56 for threatening behaviour, .67 for sexual abuse, .36 for relational abuse, and .55 for verbal/emotional abuse; victimisation – .79 for physical abuse, .71 for threatening behaviour, .70 for sexual abuse, .57 for relational abuse, and .56 for verbal/emotional abuse. The Cronbach's alpha coefficients for the perpetration and victimisation total scales were also weak, .62 and .67, respectively, and lower than those reported in the original CADRI-S validation study (Fernández-González et al., 2012). However, based on the mean inter-item correlations, the total scales for CADRI-S perpetration and victimisation, along with all five subscales, demonstrated good internal consistency, falling within the recommended range of .15–.50 (Domino & Domino, 2006).

A retest was conducted with 32 participants four weeks after the initial testing to assess the test–retest reliability of the CADRI-S scale. The results revealed positive and significant test–retest correlations for the CADRI-S total perpetration and CADRI-S total victimisation mean scores, demonstrating good reliability, with correlation coefficients of 0.71 and 0.60, respectively. Additionally, estimates and 95% confidence intervals were calculated using a two-way mixed effects model with a single measure (ICC). The findings indicated good absolute agreement between the two-time points for CADRI-S total perpetration (ICC = 0.78; 95% CI [0.56, 0.89]) and moderate agreement for CADRI-S total victimisation (ICC = 0.78; 95% CI [0.15, 0.80].

Prevalence rates, violence patterns, and comparisons between groups

In the current study we found a prevalence rate of VDR perpetration of 58.6% and of VDR victimisation of 63.4%. The type of violence most perpetrated and suffered was verbal and emotional violence (63.4% and 58.4%, respectively). In terms of perpetration, threatening behaviour (6.9%) was the second most reported type of violence, while regarding victimisation the second most reported types were sexual (10.7%) and relational violence (10.5%) with similar prevalence (cf. Table 7).

Regarding sex, there were only significant differences in CADRI-S physical abuse perpetration ($t = -2.770$, $p = .006$) and in CADRI-S sexual abuse victimisation ($t = -2.448$, $p = .001$). Women reported perpetrating more physical abuse than men and reported more sexual abuse victimisation than men (see Table 7).

To identify the most prevalent pattern of violence, the sample was categorised into four groups based on the presence or absence of dating victimisation and perpetration: (1) the group without violence (individuals who did not report either victimisation or perpetration); (2) the group with violence perpetration (individuals who reported perpetrating at least one act of violence but no victimisation); (3) the group with violence victimisation (individuals who reported experiencing at least one act of violence but did not report perpetrating any);

Table 7. Descriptive statistics and tests of differences for the CADRI-S and its scales.

	N(%)	Women M (SD)	Men M (SD)	*t*(df)	*d*
Perpetration					
CADRI-S Total	307 (58.6)	2.04 (2.66)	1.74 (2.23)	−.972 (517)	.119
CADRI-S PA	23 (4.4)	.14 (.66)	.03 (.23)	−2.770 (353)**	.182
CADRI-S TA	36 (6.9)	.19 (.73)	.11 (.64)	−.880 (517)	.108
CADRI-S SA	14 (2.7)	.07 (.49)	.08 (.39)	.149 (517)	.018
CADRI-S RA	31 (5.9)	.12 (.54)	.24 (.85)	1.211 (89)	.202
CADRI-S V/EA	332 (63.4)	1.53 (1.61)	1.28 (1.58)	−1.265 (517)	.155
Victimisation					
CADRI-S Total	332 (63.4)	2.64 (3.26)	2.19 (2.83)	−1.168 (517)	.143
CADRI-S PA	22 (4.2)	.14 (.73)	.08 (.50)	−.795 (517)	.097
CADRI-S TA	25 (4.8)	.15 (.72)	.19 (.85)	.440 (517)	.054
CADRI-S SA	56 (10.7)	.37 (1.08)	.11 (.52)	−2.248 (220)**	.258
CADRI-S RA	55 (10.5)	.29 (.95)	.45 (1.15)	1.170 (98)	.163
CADRI-S V/EA	306 (58.4)	1.70 (1.71)	1.37 (1.57)	−1.585 (517)	.194

Note. CADRI-S = CADRI-S = Conflict in Adolescent Dating Relationships Inventory – Short Form; PA = Physical Abuse; TB = Threating behaviour; SA = Sexual Abuse; RA = Relational abuse; V/EA = Verbal/emotional abuse.
**$p < .01$.

and (4) the group with bidirectional dating violence (individuals who reported both perpetrating and experiencing at least one act of violence). The pattern of violence more prevalent in this sample was bidirectional VDR ($n = 285$; 54.4%), followed by victimisation only ($n = 47$; 9%) and perpetration only ($n = 21$; 4%), and 32.4% (n = 170) reported any act of dating violence perpetration or victimisation. No differences were found between men and women in the pattern of violence, $\chi^2(3) = 3.238$, $p = .356$.

Discussion

VDR is a global public health problem with several negative consequences for young people's health and wellbeing (Carter-Snell, 2015; Vives-Cases et al., 2021). Considering the high prevalence of VDR, not only in adolescents but also in emerging adults, there is an urgent need to adapt measures with good psychometric properties for assessing this phenomenon. Furthermore, the indicators of VDR in Portugal have not decreased and have been relatively stable over the last two decades (Neves et al., 2021). Moreover, Portugal lacks brief, simple and adequate measures for a better understanding of VDR in emerging adults, such as the CADRI-S, a 10-item short form of the CADRI, validated among a sample of Portuguese emerging adults.

The CFA confirmed the five-factor model proposed by Fernández-González et al. (2012), thereby validating the data from the original CADRI-S version. The goodness-of-fit indices showed acceptable scores, except for χ^2/df for CADRI-S perpetration. However, Byrne (1989) suggested that, depending on the complexity of the model, cut off points between two and five are acceptable. In the present study the value for χ^2/df CADRI-S perpetration was 3.155 (i.e. in the range proposed by Byrne (1989). In addition, although two factor loadings for CADRI-S perpetration and one for CADRI-S victimisation are lower than .50, all are above .30, as suggested by Blunch (2016).

Regarding convergent validity, as expected, results showed that the CADRI-S subscales (victimisation and perpetration) were significantly and positively correlated

with the cyberviolence subscale (CADRI-P victimisation and perpetration) and the subscales of the ADVS. Indeed, the literature has shown that cyber VDR and face-to-face VDR perpetration and victimisation are highly connected, frequently cooccur and often constitute different manifestations of the same pattern of abusive relationship dynamics (e.g. Caridade et al., 2020; Gilbar et al., 2023; Rodríguez-deArriba et al., 2024), reinforcing the notion that cyber VDR is linked to traditional forms of VDR and may persist even when partners are in close physical proximity (Marganski & Melander, 2018). Furthermore, research also stated that VDR perpetration and victimisation are linked to attitudes towards dating violence, with attitudes justifying VRD being associated with perpetrating VDR (e.g. Cano-Gonzalez et al., 2022; Courtain & Glowacz, 2021). Nevertheless, not all CADRI-S subscales were significantly correlated with the external measures. Several factors may explain these findings. First, the CADRI-S subscales contain only two items each, which may limit score variability, reduce reliability, and attenuate correlations with related constructs (Field, 2017). Second, although cyber abuse and face-to-face dating violence are associated, they are not identical phenomena and may reflect distinct forms of aggression and victimisation occurring through different interactional contexts (Caridade et al., 2020; Marganski & Melander, 2018). Therefore, strong associations would not necessarily be expected across all dimensions. Third, attitudes towards dating violence represent cognitive beliefs regarding the acceptability of aggression, whereas the CADRI-S assesses actual experiences of perpetration and victimisation. Consequently, these constructs are theoretically related but conceptually distinct (Cano-Gonzalez et al., 2022). This distinction may be particularly relevant for victimisation, as experiences of dating violence are influenced by multiple individual, relational, and contextual factors that extend beyond personal attitudes and beliefs (Jouriles et al., 2017; Vagi et al., 2013). In addition, cultural and contextual factors may have contributed to the weaker or non-significant associations observed for some subscales. Although rigorous translation and back-translation procedures were conducted to ensure semantic and conceptual equivalence with the original instrument, cross-cultural differences in the interpretation and endorsement of specific items may still occur despite careful adaptation procedures (International Test Commission [ITC], 2017). Likewise, differences between the Portuguese sample and the populations included in previous validation studies may have influenced item functioning and the strength of associations with external variables (Taber, 2018). This possibility is consistent with recommendations highlighting the need for further validation research and examination of dating violence measures across diverse cultural and minority populations (Ricks et al., 2023). Finally, most significant correlations were of small magnitude ($r <$ .30). Although some authors argue that weak correlations provide limited evidence of convergent validity (Barker et al., 2015), modest effect sizes are not uncommon when examining theoretically related but non-equivalent constructs and when using brief screening measures composed of few items (DeVellis, 2017). Therefore, the pattern of results should be interpreted as providing partial but meaningful support for the convergent validity of the Portuguese version of the CADRI-S.

In terms of discriminant validity, almost all CADRI-S subscales demonstrated positive intercorrelations, consistent with the original study (e.g. Fernández-González et al., 2012). This was anticipated, as each factor represents a distinct dimension of the types of VDR victimisation and perpetration. The findings indicate that the subscales possess a reasonable level of discriminative ability, suggesting that each factor captures a unique aspect of the VDR construct. However, two subscales are not correlated, namely the verbal/emotional abuse victimisation and physical abuse victimisation. These results may be due to the

different psychological impacts of verbal/emotional and physical abuse, which can affect how individuals perceive and report their experiences. Physical abuse is more obvious and easier to identify, whereas emotional abuse is often subtle, harder to detect by both the victim and others, and may not always be seen as a form of violence (Francis & Pearson, 2021). Although psychological violence is the most common type of abusive behaviour found in adolescent and emerging adults' relationships, they still find it difficult to recognise it as a form of violence (Caridade, 2011; Coker et al., 2014). In addition, adolescent and young adults seem to have a tendency to minimise and relativise violence in their relationships (e.g. Magalhães et al., 2019), often perceiving certain abusive behaviours as jealousy or acts of love (Caridade, 2018; Caridade et al., 2020).

The discriminant analysis also showed that CADRI-S perpetration seems to reveal an adequate ability to distinguish emerging adults who legitimise attitudes towards dating violence from those who do not sustain such beliefs. This finding is in accordance with prior findings that reveal a positive link between dating violence perpetration and attitudes legitimising dating violence (e.g. Cano-Gonzalez et al., 2022; Caridade, 2011; Courtain & Glowacz, 2021). In contrast, CADRI-S victimisation scale seems less able to discriminate between those who sustain attitudes about dating violence, especially attitudes regarding the use of physical and sexual violence by girls and women, and those who do not sustain such attitudes and beliefs. Several explanations may account for this finding. First, it may reflect gendered social beliefs regarding the use of violence in intimate relationships. Although women can and do perpetrate dating violence, physical and sexual aggression committed by girls and women is often perceived as less frequent, less harmful, or less socially plausible than equivalent behaviours perpetrated by boys and men (e.g. Bates, 2016; Machado & Matos, 2014). Consequently, attitudes concerning female-perpetrated violence may not closely correspond to actual victimisation experiences. Alternatively, the weaker discriminatory capacity of the victimisation scale may suggest that attitudes towards dating violence are more strongly linked to perpetration than to victimisation. Whereas perpetration is partly influenced by beliefs about the acceptability or justification of aggressive behaviour, victimisation experiences are shaped by a broader range of factors, including relationship characteristics, exposure to previous violence, interpersonal dynamics, social influences, and contextual circumstances (Jouriles et al., 2017; Vagi et al., 2013). Thus, individuals may experience victimisation regardless of whether they personally endorse or reject attitudes accepting dating violence. Indeed, research has consistently identified attitudes supporting violence as a more robust correlate of perpetration than victimisation (Cano-Gonzalez et al., 2022; Vagi et al., 2013). Finally, it is possible that attitudes measured by the ADVS capture general beliefs about the legitimacy of violence, whereas victimisation reflects lived experiences that are not necessarily determined by one's own attitudes. Victimisation has been associated with factors such as relationship quality, exposure to previous violence, family and peer influences, substance use, and broader social and contextual vulnerabilities (Jouriles et al., 2017; Wincentak et al., 2017). Therefore, the weaker associations observed for victimisation should not be interpreted as evidence of poor validity but rather as indicative of the complex and multifactorial nature of dating violence victimisation. Taken together, these findings suggest that the relationship between attitudes towards dating violence and experiences of victimisation may be less direct than the relationship observed for perpetration and should be interpreted with caution.

Results regarding concurrent validity also reveal that CADRI-S subscales can distinguish between those who reported committing

violent crimes in the past 12 months and individuals who did not report committing crimes. This result is in accordance with previous studies that found that juvenile delinquency was positively related to, and predictive of VDR perpetration (e.g. Renner & Whitney, 2012; Walters & Espelage, 2018) and victimisation (e.g. Paat et al., 2020).

Regarding internal consistency, the Cronbach's alpha coefficients for the perpetration and victimisation total scales were relatively low but were consistent with those reported in the original study (Fernández-González et al., 2012). Although these coefficients fell slightly below the conventional .70 threshold, values above .60 have been considered acceptable in exploratory research, during the early stages of scale development (Nunnally & Bernstein, 1994; Taber, 2018), and for scales containing a small number of items (Field, 2017). The Cronbach's alpha coefficients for most subscales were also below recommended levels. Direct comparisons with the original study were not possible because reliability coefficients for the subscales were not reported, given the small number of items per dimension. Importantly, Cronbach's alpha is highly influenced by scale length (Field, 2017), and each CADRI-S subscale contains only two items. Consequently, lower alpha values are not unexpected. Similar findings have been reported in other studies involving brief scales and subscales with few items (e.g. Cunha et al., 2022). In addition, Cronbach's alpha is known to be sample-dependent and may vary across populations, age groups, cultural contexts, and settings (Taber, 2018). Furthermore, although rigorous translation and back-translation procedures were undertaken to ensure semantic and conceptual equivalence with the original CADRI-S, subtle cultural or linguistic differences in the interpretation of some items may nevertheless have influenced participants' responses and, consequently, the reliability estimates obtained in the Portuguese sample. Taken together, these factors suggest that the observed alpha coefficients may underestimate the true reliability of the instrument. Therefore, to provide an additional assessment of internal consistency, we calculated mean inter-item correlations. This approach is particularly appropriate for brief scales and yielded values within the recommended range of .15 to .50 (Domino & Domino, 2006), supporting the adequacy of the CADRI-S internal consistency.

Results regarding prevalence rates of VDR victimisation and perpetration followed international and national trends on this phenomenon, revealing high rates of VDR among emerging adults (e.g. Caridade, 2011; Magalhães et al., 2021; Neves et al., 2021; Neves et al., 2023; Santiago et al., 2025; Sardinha et al., 2024; Tomaszewska & Schuster, 2021; Wincentak et al., 2017). However, these findings should also be interpreted in light of limitations related to the measurement of dating violence. As noted in the literature, variability in how different forms of violence are defined and assessed may influence prevalence estimates and complicate comparisons across studies (Tomaszewska & Schuster, 2021). The high prevalence of VDR could be explained by the high rates and insidious nature of psychological violence. As this type of violence does not leave physical traces, it is harder to detect and easier to justify and overlook (Brewer et al., 2018). In our study, psychological VDR was the type of violence most reported, either in terms of victimisation or perpetration, aligning with prior studies (e.g. Caridade, 2011; Santiago et al., 2025; Tomaszewska & Schuster, 2021). Regarding sex differences, results only reveal differences in particular types of violence. Women reported perpetrating more physical abuse and suffering more sexual abuse than men. These findings add additional information to the inconsistent results regarding gender differences in VDR victimisation (e.g. Caridade, 2023; Fass et al., 2008). Fass et al. (2008) found that male college students reported more physical violence

(42%) than females (32%), though both genders had similar rates of psychological and sexual victimisation. In contrast, Gover et al. (2008) found no gender differences in physical victimisation, but females reported more psychological victimisation. Another study with 704 students found no significant differences between males and females in physical, sexual, or psychological victimisation (Dardis et al., 2017). However, other studies reveal that boys report more victimisation than girls while girls report more physical violence perpetration than boys (e.g. Caridade, 2011; Cascardi & Avery-Leaf, 2015). Notwithstanding the inconsistent findings, recent literature seems to reveal a tendency for girls to exceed boys in VDR perpetration, with mild physical attacks but especially at emotional level (Neves et al., 2021). These findings may be interpreted in light of broader changes in gender roles and relationship dynamics, with some recent studies suggesting shifts in attitudes towards the acceptability of certain behaviours within intimate relationships (e.g. Cano-Gonzalez et al., 2022; Neves et al., 2021). However, this interpretation should be treated with caution, as observed patterns may also be influenced by measurement-related factors. Differences in how dating violence and attitudes are operationalised, as well as variability in the forms of violence assessed (e.g. physical vs psychological or bidirectional forms), may contribute to inconsistencies in findings across studies. Therefore, these results should be understood within the broader context of both evolving social norms and methodological variability.

Finally, as found in other studies both with adolescents, emerging adults, and adults, bidirectional violence was the most prevalent pattern of violence (e.g. Capinha et al., 2022; Carranza et al., 2022; Machado et al., 2024; Pereda et al., 2022; Santiago et al., 2025; Vasconcelos et al., 2025). The significant high prevalence of bidirectional VDR could be due to the fact that emerging adults tend to resort to violence, especially less severe violence, as a solution in situations of increased conflict and tension (Palmetto et al., 2013). These patterns may also reflect earlier relational experiences, including exposure to violence in the family context and the internalisation of maladaptive conflict resolution strategies, as suggested by social learning perspectives (Capaldi et al., 2012).

Nevertheless, the current study had some limitations that should be mentioned. First, our sample was collected using convenient methods, which limit the generalisability of the current findings. Second, participants responded to the protocol online, so only people with internet access and motivation to online surveys would answer it, and the sample was mainly composed of educated women. Third, measurement invariance across gender was not tested due to the highly unbalanced sample composition, with a predominance of female participants. This imbalance may compromise the reliability and interpretability of multi-group analyses, limiting the validity of comparisons between groups. Future studies should include a more diverse sample, including more men and at-risk groups. Fourth, online surveys tend to capture less severe, situational, and mutual violence (Cunha et al., 2025). Fifth, participants' responses to the questionnaire could be biased, particularly regarding reports of VDR perpetration, which may be shaped by concerns about self-presentation and social desirability (Cunha et al., 2022).

Despite its limitations, this study is particularly important as it represents the first adaptation of the CADRI-S for the emerging adult Portuguese population. Additionally, the findings demonstrate the usefulness of the CADRI-S within the emerging adult sample in the community, as it appears to be a suitable tool for accurately assessing both VDR perpetration and victimisation. A brief, easily administered, and effective self-report tool would be beneficial for professionals and researchers working with these emerging adults for various purposes. First, this new, valid tool could

be crucial for researching risk and protective factors in dating violence, as well as exploring the relationship between conflict in emerging adult couples and other variables. Second, the CADRI-S facilitates the identification of VDR perpetration and victimisation, and bidirectional patterns of VDR among emerging adults, providing crucial insights for developing and implementing effective intervention programs. Additionally, it aids professionals in making informed decisions about managing individuals, assigning appropriate treatments, and evaluating treatment outcomes.

Ethical standards

Declaration of conflicts of interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

Ethical approval

All procedures performed were in accordance with the ethical standards of the institutional ethics committee and with the 1964 Helsinki declaration and its later amendments. The current study is part of a research project approved by the Lusófona University Ethics Committee.

Informed consent

Informed consent was obtained from all subjects involved in the study.

Institutional review board statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee Lusófona University (CEDIC-2020-15-8 on December 15, 2020).

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Supplementary material

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Data availability statement

The data sets generated during and/or analysed during the current study are not publicly available due to confidentiality of the data but are available from the corresponding author on reasonable request. The data presented in this study are available on request from the corresponding author due to privacy issues.

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