Psychosocial Intervention (2020) 29(1) 9-18

Psychosocial Intervention

https://journals.copmadrid.org/pi

Efficacy of a Brief Intervention Based on an Incremental Theory of Personality in the Prevention of Adolescent Dating Violence: A Randomized Controlled Trial

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ARTICLE INFO

Article history:
Received 6 March 2019
Accepted 22 June 2019
Available online 23 July 2019

Keywords:
Dating violence
Prevention
Implicit theories of personality
Adolescents

A B S T R A C T

New intervention approaches are required for dating violence (DV) prevention, given the limited results of existing programs in achieving behavioral changes. The main objective of this study was to explore the effect of a brief, single-session intervention aimed at promoting an incremental theory of personality (ITP) on dating violence perpetration (DVP) and dating violence victimization (DVV). A double-blind randomized controlled trial (RCT) with two parallel groups (experimental vs. control) was conducted. Participants were 123 adolescents (53.7% females, M_{age} = 15.20, *SD* = 0.99). Assessment measures were administered one week prior to the intervention, and six months and one year after the intervention. The results of the hierarchical linear models showed that the interaction between time and condition was statistically significant for DVP, showing a significant decrease both in traditional and cyber dating abuse in the experimental condition. The ITP intervention had no effect on DVV. Our findings suggest that the ITP intervention decreases the perpetration of aggressive acts toward the dating partner and support the idea that strategies aimed at preventing peer conflict may also prevent DVP. Increasing our empirical evidence about the efficacy of a one-hour self-applied intervention is of great relevance for moving forward in the prevention of DV.

La eficacia de una intervención breve basada en la Teoría Incremental de la Personalidad para la prevención de la violencia en las relaciones de noviazgo adolescentes: un ensayo clínico aleatorizado

Palabras clave:
Violencia en el noviazgo
Prevención
Teorías implícitas de la personalidad
Adolescentes

R E S U M E N

La necesidad de nuevos enfoques de intervención para la prevención de la violencia en el noviazgo (VN) deriva de las limitaciones de los programas existentes para lograr cambios conductuales. El objetivo principal de este estudio fue examinar el efecto de una intervención breve –de una sesión– dirigida a promover una teoría incremental de la personalidad, sobre la perpetración (PVN) y victimización (VVN) de violencia en el noviazgo. Se realizó un ensayo clínico aleatorizado doble ciego con dos grupos paralelos (experimental vs. control). Los participantes fueron 123 adolescentes (53,7% mujeres, M_{edad} = 15.20, *DT* = 0.99). Las medidas de evaluación se administraron una semana antes de la intervención, seis meses después de la intervención y un año después de la intervención. Los resultados de los modelos lineales jerárquicos mostraron que la interacción entre el tiempo y la condición fue estadísticamente significativa para la PVN, mostrando una disminución significativa tanto en el abuso tradicional como en el ciberacoso en la pareja en la condición experimental. La intervención no tuvo ningún efecto para la VVN. Nuestros hallazgos sugieren que la intervención disminuye la perpetración de actos agresivos hacia la pareja y apoyan la idea de que las estrategias dirigidas a prevenir conflictos entre iguales pueden también prevenir la PVN. El incremento de evidencia empírica sobre la eficacia de una intervención autoaplicable de una hora de duración es de gran relevancia para avanzar en la prevención de la VN.

Dating violence (DV) is an important, prevalent problem in adolescence worldwide (Wincentak, Connolly, & Card, 2017). It includes any act of physical, emotional, or sexual violence that can take place in person or electronically (Centers for Disease Control and Prevention, 2016). The recent meta-analytic review of teen DV prevalence rates by Wincentak et al. (2017) showed an overall rate of 20% and 9% for physical and sexual aggression, respectively. Adolescents who are involved in violent dating relationships are

Cite this article as: Fernández-González, L., Calvete, E., & Sánchez-Álvarez, N. (2020). Efficacy of a brief intervention based on an incremental theory of personality in the prevention of adolescent dating violence: A randomized controlled trial. *Psychosocial Intervention, 29,* 9-18. https://doi.org/10.5093/pi2019a14

Funding: This research was supported by grants from the Ministry of Economy and Competitiveness (Spanish government, Ref. PSI2015-68426-R), the Basque Country government (Ref. IT982-16 and Ref. PI_2016_1_0023), and the Red PROEMA (PSI2017-90650-REDT). Correspondence: liria.fernandez@deusto.es (L. Fernández-González).

at a higher risk of a number of psychological, social, academic, and physical problems (Chiodo et al., 2012; O'Leary, Slep, Avery-Leaf, & Cascardi, 2008), and an increased risk of suffering intimate partner violence in adult life (Ramiro-Sánchez, Ramiro, Bermúdez, & Buela-Casal, 2018; Smith, White, & Holland, 2003; Sunday et al., 2011).

In view of the scope and potential negative impact of engaging in conflictual romantic relationships during adolescence, as well as the difficulty in successfully treating intimate partner violence in adult life, the relevance of prevention at early developmental stages has been emphasized (O'Leary & Slep, 2012). Adolescent DV prevention programs have shown efficacy to modify cognitions and attitudes related to partner violence. However, behavioral changes in the levels of aggression have been reported in very few cases (De La Rue, Polanin, Espelage, & Pigot, 2017; Shorey et al., 2012; Whitaker et al., 2006), which points to the need to explore new intervention approaches to reduce adolescent dating aggressive behaviors. There have been some previous attempts to test innovative brief interventions for secondary and tertiary DV prevention and, as asserted by Rothman and Wang (2016), the promising results shown by these interventions and the need of innovation in the area of DV should encourage researchers to try novel approaches. Therefore, the main objective of this study was to explore the effect of an innovative, brief single-session intervention based on implicit theories of personality to decrease dating violence perpetration (DVP) and dating violence victimization (DVV).

Dating Violence Prevention: Existing Programs and Limitations

A number of DV prevention programs have been developed in the last decades (see for a review De La Rue et al., 2017; Whitaker et al., 2006). Some programs are aimed at at-risk populations, for instance, adolescents who have been victims of child abuse (e.g., the Expect Respect Program; Ball, Kerig, & Rosenbluth, 2009; the Youth Relationships Project; Wolfe et al., 2003). Universal preventive interventions aimed at the general population of adolescents have also been developed and evaluated. Some noteworthy programs in this area are the Fourth R Skills for Youth Relationships (Wolfe et al., 2009) and the Safe Dates Project (see, for example, Foshee et al., 2005). In addition, innovative methodologies, as for instance game-based interventions, have also been proposed for primary DV prevention. For example, Bowen et al. (2014) developed an educational computer game (Green Acres High) aimed at raising awareness of and changing attitudes towards DV in adolescents.

As mentioned, although most DV prevention programs developed to date have shown efficacy in modifying cognitions and attitudes related to partner violence, behavioral changes have been reported in very few cases (De La Rue et al., 2017; Shorey et al., 2012; Whitaker et al., 2006). De La Rue et al.'s (2017) meta-analysis examined 23 studies that had assessed the efficacy of DV prevention programs implemented in middle and high schools. Their results evidenced that school-based programs are effective in increasing DV knowledge and shifting attitudes legitimizing violence in dating relationships, but DV behaviors – both perpetration and victimization – are not affected to a significant extent. Another limitation of existing programs is related to the study design. RCTs and long-term follow-ups are not usual (Shorey et al., 2012). Additionally, the programs developed until now are mostly multi-session, and some of them imply the involvement of various actors (students, schools, and parents). Although multi-session, multi-component programs that include a skill-building component have been highlighted to achieve behavioral changes and long-term effects (De La Rue et al., 2017; Whitaker et al., 2006), some researchers have also emphasized the potential relevance of brief interventions (Schleider & Weisz, 2017a).

Brief Interventions: An Overview

A meta-analysis conducted by Schleider and Weisz (2017b) explored the efficacy of single-session interventions for youth psychological problems. The findings from 50 RCTs demonstrated a significant beneficial effect for certain psychological problems, with the largest effect for anxiety and conduct problems although, overall, the effects waned over time (Schleider & Weisz, 2017b) and were slightly smaller than those of larger interventions (Weisz et al., 2017). Despite these limitations, other advantages are relevant for consideration and may justify the choice of single-session interventions under certain circumstances. Specifically, its brevity and flexible format (e.g., via computers, individuals without psychotherapy training, or self-administered) reduce costs, broaden accessibility to populations who might not otherwise access mental health care, and maximize scalability (Schleider & Weisz, 2017a).

Particularly in the area of DV prevention, in recent years, a few studies have brought into focus the effect of single-session interventions for secondary and tertiary prevention. For example, the studies by Cunningham et al. (2013) and Rothman and Wang (2016) examined the effect of brief interventions using the principles of motivational interviewing to reduce perpetration of DV in medical center settings among at-risk adolescents, showing its potential to influence target attitudinal and behavioral outcomes. Beyond the DV prevention area, other types of brief interventions directed at adolescents have emerged. For instance, some researchers have focused on the potential effect of brief interventions based on promoting an incremental theory of personality (ITP) in emotional well-being of adolescents and youth (Schleider & Schroder, 2018; Yeager, Lee, & Jamieson, 2016). ITP interventions specifically aim at changing entity theories of personality (i.e., the belief that personal characteristics are fixed and cannot be changed) for an incremental theory of personality (i.e., the belief that people do have the potential to change). ITP interventions use strategies derived from research on persuasion and attitude change, such as a focus on students' perspectives and scientific information. Moreover, they are presented to participants with no intention of modifying their characteristics so that the adolescents do not feel manipulated, thereby minimizing resistance to change (for a review, see Yeager & Walton, 2011).

ITP-based interventions have shown efficacy to improve internalizing problems such as depression and anxiety in adolescents (Miu & Yeager, 2015; Schleider & Weisz, 2018). A positive effect has also been proved in other behavioral areas such as academic achievement (Romero, Master, Paunesku, Dweck, & Gross, 2014; Yeager et al., 2014). Particularly, in the area of peer aggression, the only previous study that has explored the effect of a single-session intervention based on ITP in peer conflict situations (Yeager, Trzesniewski, Tirri, Nokelainen, & Dweck, 2011) found that experimentally inducing an incremental theory (a belief in the potential for change) about oneself and about bullies in high school students reduced the desire to take revenge on perpetrators. These results suggest that interventions based on promoting an incremental theory of personality show promise to reduce peer aggression, although behavioral intentions, but not actual aggressive behaviors, were measured. Thus, conclusions about the efficacy of single-session interventions based on ITP to reduce adolescent aggressive behaviors are still preliminary, and no study to date has explored its effect, particularly on aggressive behaviors in the context of a dating relationship.

Why may ITP interventions help to reduce DVP? These types of interventions have been shown to reduce aggression toward peers, but also to promote overall prosocial behaviors such as being more respectful and friendly to others (Yeager et al., 2011; Yeager, Trzesniewski, & Dweck, 2013), and therefore, they could also encourage behaving more prosocially and less aggressively in the context of a dating relationship. Moreover, increasing empathy and the ability to put oneself in other's place, promoting self-esteem

and self-confidence to handle stressful situations, and decreasing hostility and angry feelings are core elements targeted by the ITP intervention and, at the same time, variables that have been identified as relevant DV risk factors (e.g., Pflieger & Vazsonyi, 2006; Vagi et al., 2013).

The Present Study

Considering the above, the main objective of this study was to explore the effect of a brief single-session ITP intervention on DVP and DVV. Based on the results of previous studies exploring the effect of this type of intervention on adolescent aggressiveness in peer conflict situations (Yeager et al., 2013; Yeager et al., 2011), we hypothesized that perpetration of DV behaviors will be significantly reduced in adolescents who received the ITP intervention in comparison to a control group of adolescents who received an educational intervention about the human brain. Regarding DVV, considering the predominant bidirectional pattern of aggression in dating relationships (Chiodo et al., 2012; O'Leary et al., 2008), we expected that a potential impact of the intervention in victimization may also occur. Another objective of this study was to explore whether the effect of the ITP intervention on DVP and DVV was moderated by participants' sex. As the prevalence of DV is high in both boys and girls and previous studies have not evaluated sex differences in the effects of interventions based on ITP in aggressive behavior, we did not state any specific hypothesis about sex differences.

Method

Study Design and Procedure

We conducted a double-blind randomized controlled trial (RCT) with two parallel groups (experimental vs. control). Recruitment was carried out via educational centers. We invited a random sample of 20 school headmasters from all high schools in Bizkaia (Basque Country, Spain) to participate in the study. Of them, the headmasters of ten schools agreed to participate and four schools were randomly selected for this study, which is part of a larger research project aimed at assessing the effect of the ITP intervention on several internalizing and externalizing problems. Eligible participants were those who were enrolled in any of the four high schools and who spoke Spanish or Basque fluently (N = 603). Informed consent was required both from parents and adolescents. Ten adolescents declined to participate in the study, and 147 parents did not provide consent. Moreover, 44 adolescents were excluded from the study because they were not in class on the days of the pretest and/or intervention, and 279 adolescents were excluded because they had not begun dating (see Figure 1). Randomization took place on the day of the intervention and was done at individual level within each classroom, blocked by sex. Allocation was concealed to participants, researchers, and teachers. Participants completed task interventions on paper individually, and assessment measures were administered one week prior to the intervention (pretest), one week after the intervention (post-

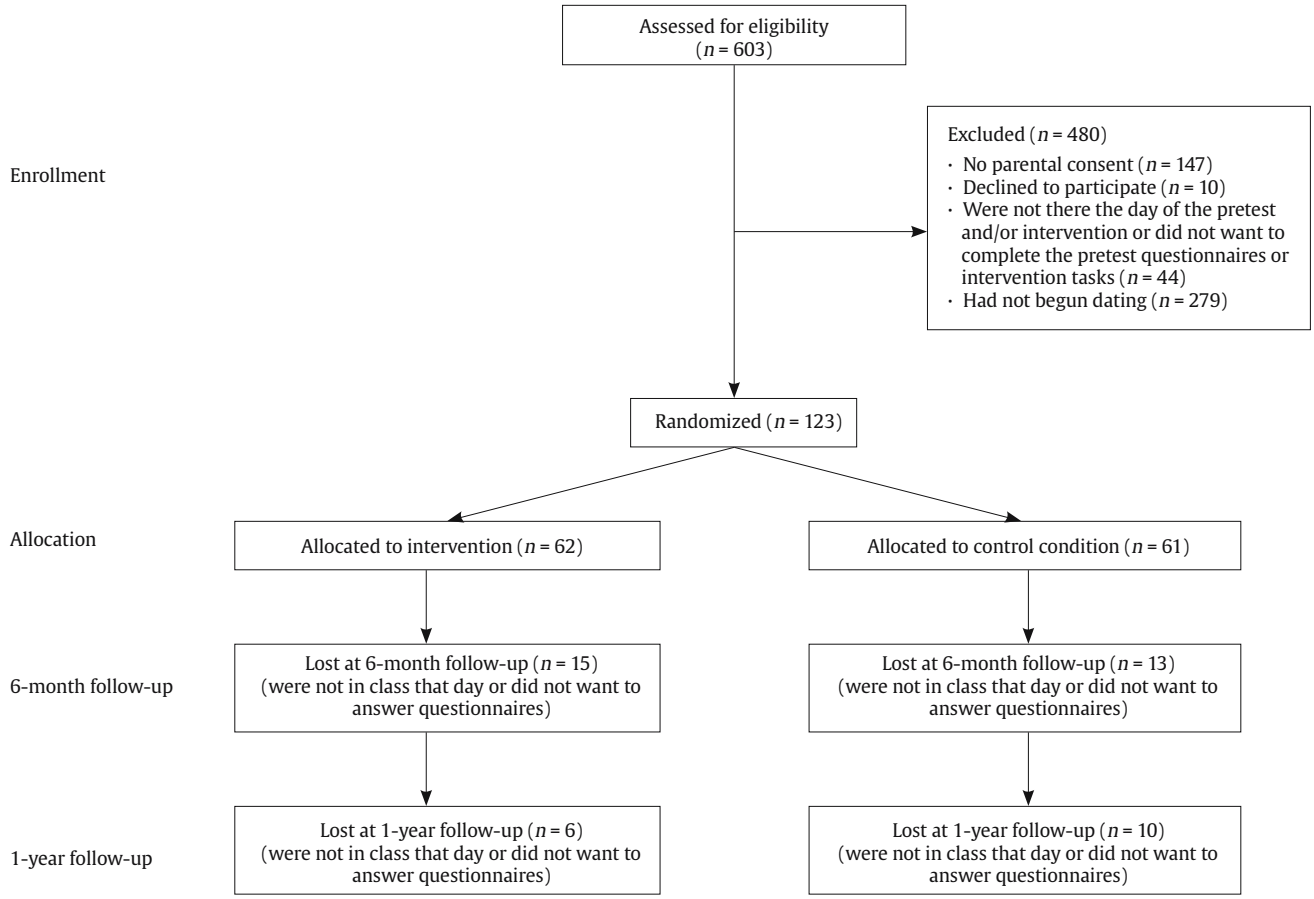

Figure 1. CONSORT Diagram.

Table 1. Fit Indexes of the Models

Models	Fit Indexes						
	df	*N*	χ^2	SBχ^2	RMSEA	NNFI	CFI
DVP							
Unidimensional model	275	123	3008.93, $p < .001$	476.90, $p < .001$	.078 [90% CI:.066, .089]	.97	.97
Two-factor model	274	123	2978.50, $p < .001$	450.41, $p < .001$	.073 [90% CI:.060, .087]	.97	.97
DVV							
Unidimensional model	275	123	1715.96, $p < .001$	399.18, $p < .001$	.061 [90% CI:.047, .074]	.98	.98
Two-factor model	274	123	1658.09, $p < .001$	364.61, $p < .001$	.052 [90% CI:.037, .066]	.98	.98

Note. DVP = dating violence perpetration; DVV = dating violence victimization.

test), six months after the intervention (6-month follow-up), and one year after the intervention (1-year follow-up). Because of the short time frame of the post-test (see Measures section), the resulting behavioral assessment of dating aggression at the post-test was not comparable to the measures obtained in the other waves, and therefore it was not used for this study's analyses. Both interventions and assessment measures were administered by research assistants during normal class time (clinicaltrials.gov identifier NCT03583645). The Ethics Committee of the University of Deusto approved this study and confidentiality was guaranteed.

Participants

One hundred and twenty-three adolescents participated in this study, with 62 participants allocated to the experimental condition and 61 to the control condition (see Figure 1). Of these, 28 participants did not complete measures at the 6-month follow-up (attrition rate = 22.76%), and another 16 participants did not complete measures at the 1-year follow-up (attrition rate = 35.77%), mainly because they were not in class on the day of data collection. Thus, 79 participants (41 in the experimental group and 38 in the control group) completed the three assessment waves. Attrition analyses revealed that there were no significant differences between completers ($n = 79$) and non-completers ($n = 44$) in condition or sex, although non-completers were significantly older ($M_{age} = 15.57$) than completers ($M_{age} = 15.00$), $t(121) = 3.23$, $p < .01$. Mean scores of DV were higher for non-completers compared to completers, mainly in the case of victimization, although the differences were not statistically significant. In addition, comparisons between conditions showed that there were no differences in sex or age between the experimental and control groups. With regard to DV pretest scores, this preliminary analyses revealed that participants in the experimental condition scored significantly higher in DVP, total score: $t(121) = 2.24$, $p = .027$; traditional DVP: $t(121) = 2.36$, $p = .020$; online DVP: $t(121) = 1.72$, $p = .088$, than participants in the control condition, without differences in DVV.

Sixty-six of the participants were female (53.7%) and 57 were male (46.3%), with a mean age of 15.20 years at the pretest ($SD = 0.99$, range = 13.06-17.77). Their parents' socioeconomic status was determined by using the recommendations of the Work Group of the Spanish Society of Epidemiology and the Spanish Society of Family and Community Medicine (2000), which consider parents' last job. According to this criterion, the distribution was as follows: 11.1% low, 23.2% low-medium, 12.1% medium, 32.3% high-medium, and 21.2% high socioeconomic class.

Measures

Perpetration of DV was measured by asking adolescents to report if they had carried out any of the 25 listed behaviors on her/his partner or ex-partner in the last six months (last week for the post-test measure). Fourteen of the items refer to traditional (face-to-face) dating aggressive acts and 11 items assess acts of online dating abuse. The measured aggressive behaviors were based on previous validated scales for the assessment of DV. However, as there was no previous measure that assessed the entire range of target aggressive behaviors of this study (for instance, face-to-face and online aggressions), a new ad hoc scale was elaborated which covers different types of traditional aggressions (physical, psychological, and sexual) and online aggressions. Specifically, the Conflict in Adolescent Dating Relationships Inventory (CADRI; Wolfe et al., 2001; Spanish version by Fernández-Fuertes, Fuertes, & Pulido, 2006), the Psychological Abuse in Partner Relationships Inventory (Calvete, Corral, & Estévez, 2005), and the Spanish validation (Buesa & Calvete, 2011) of the Subtle and Overt Psychological Abuse of Women Scale - SOPAS (Marshall, 1992) were considered for the construction of the items examining traditional DV. Items assessing online dating abuse were taken from the Cyber Dating Abuse Questionnaire (Borrajo, Gámez-Guadix, Pereda, & Calvete, 2015). All the items are shown in the Appendix. Next, to assess victimization, participants were asked to report if they had been victims of the same offline and online aggressive behaviors by their partner or ex-partner in the last six months. The response choices for each item were defined with a 4-point Likert-type scale ranging from 0 (*never*) to 3 (*often*).

The DV scale showed adequate psychometric properties. Specifically, the factor structure was examined through confirmatory factor analysis (CFA) with LISREL 8.8 (Jöreskog & Sörbom, 2006). We used the robust maximum likelihood (RML) method, which requires an estimate of the asymptotic covariance matrix of the sample variances and covariances and includes the Satorra-Bentler scaled χ^2 index (S-Bχ^2). A correlated two-factor (traditional and online aggression) model was tested both for DVP and DVV. Each item loaded exclusively on one factor, and the measurement error terms associated with each item were uncorrelated. The fit indices obtained for the two-factor solution were acceptable both for DVP and DVV (see Table 1). The covariance between the two factors was .91 ($p < .001$) for DVP and .87 ($p < .001$) for DVV. We also tested a unidimensional model in which all the items were explained by only one factor. This model also showed adequate fit indices both for DVP and DVV (see Table 1), although worse than those obtained for the two-factor models. The unidimensional model increased chi-squared significantly both for DVP, $\Delta\chi^2(1, N = 123) = 21.43$, $p < .001$; and DVV, $\Delta\chi^2(1, N = 123) = 57.87$, $p < .001$. Therefore, the two-factor model, which includes the differentiation between the two types of aggression (i.e., traditional and cyber dating abuse) was considered preferable. Finally, reliability was examined. Cronbach's alphas for this study's sample at pretest, 6-month follow-up, and 1-year follow-up, respectively, were .91, .97, and .90 for DVP total score; .83, .93, and .88 for traditional DVP; .90, .94, and .78 for online DVP; .93, .94, and .93 for DVV total score; .88, .92, and .89 for traditional DVV; and .88, .93, and .85 for online DVV.

Interventions

ITP intervention. The experimental intervention was developed in the United States by David Yeager and colleagues (see, for example,

Yeager et al., 2014). The intervention had three main parts that are presented to adolescents as a writing assignment to be completed in about 50-60 minutes. These parts come from now-standard methods for "wise interventions" in social psychology (Walton, 2014; Walton & Wilson, 2018; Yeager & Walton, 2011). First, participants are asked to read scientific information that provides evidence that individuals have the potential to change. They read about neurological and behavioral studies showing that behaviors are controlled by "thoughts and feelings in brains," and that pathways in the brain have the potential to be changed under the right circumstances. After reading this information, participants are asked to write three sentences to explain in their own words why scientific evidence shows that it is true that people have the potential to change. Second, participants read several normative quotes purportedly written by upperclassmen that previously read the same scientific information and endorsed its conclusions (i.e., "descriptive norms"; Cialdini, 2003). These testimonials are provided to give credibility to the incremental theory of personality. They were obtained from previous interventions in the United States and edited by the research team. The third and last part consists of a self-persuasive writing exercise (Aronson, 1999). In this final task, participants are asked to write their own version of such a narrative to share with future students (see Aronson, Fried, & Good, 2002). Specifically, adolescents have to describe a time when they felt withdrawn, rejected, or disappointed by another person at school. Then, they are asked to imagine that the same event he or she has described has happened to another student and write one to three paragraphs describing what he or she can say to help the other student to understand that people can change and that the things that are happening to him or her can also change. This activity has been shown to facilitate the internalization of the ITP intervention message, building on a long line of research on cognitive dissonance (Walton & Cohen, 2011).

Educational intervention. The control intervention involved scientific information and education about the different areas and functionalities of the human brain. This educational intervention was designed to run parallel to the experimental one; hence, it also has three main parts that are completed in around 50-60 minutes. First, participants are asked to read scientific information about the different areas of the brain and their specialties. After, participants are asked to write three sentences to explain in their own words why this information is interesting. Second, participants read several testimonials written by upperclassmen about their transition to high school and how their brains help them to adapt to the new space. All the testimonials refer to physical aspects of the school building. As for the experimental intervention, these testimonials were obtained from previous interventions in the United States and edited by the research team. The third part consists of a writing exercise. In this final task of the control intervention, participants are asked to write a letter (3-5 sentences) to another student explaining the main things he or she has learned about the human brain and what he or she thinks are important for adapting to the new physical environment in high school. Both the experimental and control interventions were adapted to our cultural specificities and translated into Spanish and Basque languages.

Data Analyses

Hierarchical linear models with HLM 6.0 (Raudenbush, Bryk, & Congdon, 2004) were used to test whether the ITP intervention reduced DV over time. We estimated separate models for each outcome (DV perpetration total score, traditional DV perpetration, online DV perpetration, DV victimization total score, traditional DV victimization, and online DV victimization) with measurement occasions (level 1) nested within individuals (level 2). We estimated the intraclass correlation coefficient (ICC) for all the outcome variables of the study over time to determine whether school centers and classes should be included as a third level in the analyses. The ICC values ranged between .00 and .08 (< .10 in all cases), suggesting that it was not necessary to include a third level in the analyses. Full information maximum likelihood (FIML) was used as the estimation method for all the models tested. FIML estimates parameters using all the available data, including cases without data (Little, Jorgensen, Lang, & Moore, 2014). For level 1, regression equations modeled variation in the repeated measures as a function of time, which was coded as 0 (pretest), 1 (6-month follow-up), and 2 (1-year follow-up). For level 2, the equations modeled individual differences in the level 1 parameters (i.e., intercepts and slopes) as a function of between-subject variables. Level 2 predictors of the intercept and the slope included condition (0 = control, 1 = experimental), sex (0 = female, 1 = male), and the interaction term between condition and sex. The inclusion of these parameters at level 2 allowed the effects of condition and sex on both the intercept and the change in the outcome variables over time to be tested. However, to increase the sample's power to detect significant changes and following the parsimony principle, sex was excluded from the models when its interaction with condition was nonsignificant. Random effects at level 2 for intercept and slope were included, thereby allowing variability between individuals in the initial levels and changes over time. Where the random effects were nonsignificant, they were removed from the final models. Finally, effect sizes were calculated so that differences between conditions in mean score changes in the outcome variables from pretest to follow-ups could be compared, using the estimated marginal means obtained in the mixed models. Where the differences between conditions in mean score changes were statistically significant, positive values of Cohen's *d* indicated greater decreases in DV for adolescents in the ITP condition compared to adolescents in the control condition. Negative values of Cohen's *d* indicated greater decreases in the control condition. Effect

Table 2. Estimated Marginal Means, Standard Deviations (Calculated from Mixed Linear Effects Models), and Prevalence Rates of Dating Violence by Condition and Time

	ITP Condition (n = 62)						Control Condition (n = 61)					
	T1		T2		T3		T1		T2		T3	
	M (*SD*)	%	*M* (*SD*)	%	*M* (*SD*)	%	*M* (*SD*)	%	*M* (*SD*)	%	*M* (*SD*)	%
DVP	0.20 (0.05)	71.0	0.15 (0.05)	50.0	0.10 (0.06)	50.0	0.11 (0.05)	59.0	0.15 (0.07)	54.5	0.19 (0.06)	48.1
DVPtr	0.26 (0.06)	71.0	0.21 (0.08)	50.0	0.15 (0.08)	50.0	0.16 (0.07)	59.0	0.26 (0.09)	54.5	0.25 (0.09)	48.1
DVPon	0.11 (0.04)	25.8	0.07 (0.05)	12.0	0.03 (0.06)	20.8	0.06 (0.04)	16.4	0.09 (0.05)	24.2	0.11 (0.05)	14.8
DVV	0.14 (0.06)	51.6	0.14 (0.09)	47.6	0.11 (0.07)	45.8	0.14 (0.09)	50.8	0.16 (0.10)	37.1	0.16 (0.08)	40.0
DVVtr	0.18 (0.08)	51.6	0.18 (0.12)	47.6	0.15 (0.10)	45.8	0.20 (0.13)	47.5	0.20 (0.14)	37.1	0.20 (0.10)	40.0
DVVon	0.09 (0.05)	19.4	0.08 (0.07)	10.0	0.05 (0.06)	12.5	0.08 (0.05)	23.0	0.10 (0.07)	20.0	0.11 (0.06)	20.0

Note. DVP = dating violence perpetration (total score); DVV = dating violence victimization; tr = traditional; on = online; T1 = time 1 (pretest); T2 = time 2 (6-month follow-up); T3 = time 3 (1-year follow-up).

sizes were defined as small for Cohen's *d* values of 0.20, medium for values of 0.50, and large for values of 0.80 (Cohen, 1992).

Results

Table 2 displays the means, standard deviations, and prevalence rates of DV at the three waves of the study for the experimental and control conditions. The results of the hierarchical linear models are depicted in Table 3. The three-way interaction between time, condition and sex was not significant for any of the outcomes, DVP total score: B = -0.05, SE = 0.08, $t(119)$ = -0.66, p = .511; traditional DVP: B = -0.04, SE = 0.09, $t(119)$ = -0.52, p = .601; online DVP: B = -0.07, SE = 0.07, $t(119)$ = -1.01, p = .314; DVV total score: B = 0.03, SE = 0.09, $t(119)$ = 0.35, p = .725; traditional DVV: B = 0.00, SE = 0.10, $t(119)$ = 0.04, p = .967; online DVV: B = 0.06, SE = 0.08, $t(119)$ = 0.83, p = .407), and therefore, sex was excluded from the models. As can be seen in Table 3 and Figure 2a, participants in the experimental condition scored higher than participants in the control group on DVP on the intercept, which is consistent with the results obtained when comparing experimental and control conditions on DV scores at pretest through *t*-tests. The slopes for DVP (total score, traditional, and online) were positive, indicating an increasing tendency for perpetration of DV over time, but not significant. The interaction between time and condition was statistically significant for the total score of DVP (B = -0.09, p = .016) and for both traditional (B = -0.11, p = .017) and online DVP (B = -0.07, p = .036). As shown in Figure 2a, perpetration of aggressive behaviors toward the dating partner decreased between the pretest and the 1-year follow-up in participants in the experimental condition, whereas there was a tendency to increase over time in participants in the control condition. The effect size comparing mean change scores on DVP (total score) was 0.34 [-0.18, 0.87] from baseline to 6 months, and 0.68 [0.12, 1.25] from baseline to the 1-year follow-up. Considering the type of aggression (traditional versus online), from baseline to the 6-month follow-up, the effect sizes were 0.37 [-0.15, 0.89] and 0.27 [-0.25, 0.80], respectively; and from baseline to the 1-year follow-up, the effect sizes were 0.74 [0.18, 1.31] and 0.54 [-0.02, 1.10], respectively. In the case of DVV, the interaction between time and condition was not significant either for traditional DVV or for online DVV (see Table 3). These results indicated that there was no effect of the ITP intervention on victimization of DVV.

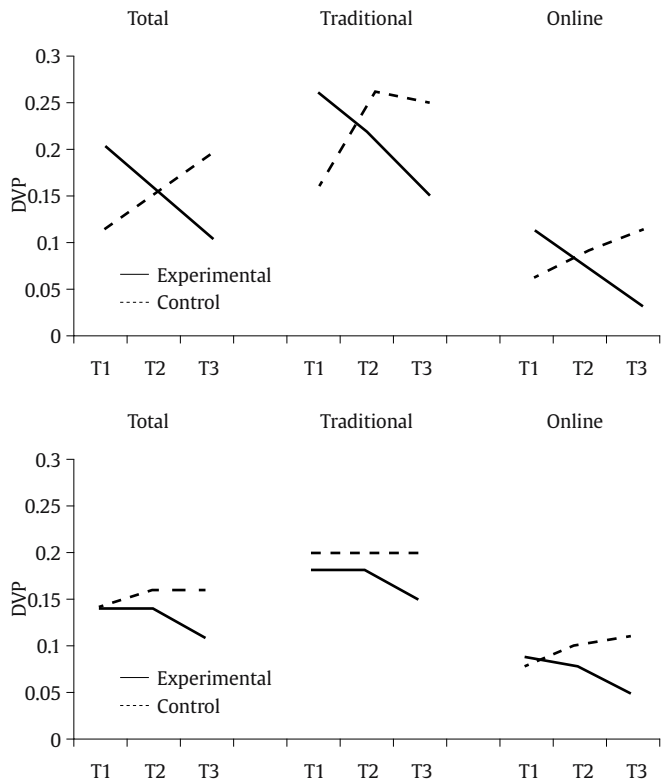

Figure 2. Trajectories of (a) DVP (dating violence perpetration), and (b) DVV (dating violence victimization) for Participants in the Experimental and Control Conditions. T1 = time 1 (pretest); T2 = time 2 (6-month follow-up); T3 = time 3 (1-year follow-up). Displayed values are estimated values in the mixed models.

Discussion

The advantages of brief interventions in terms of cost-effectiveness and broadened accessibility have been brought into focus by researchers in different areas. In particular, one single-session ITP interventions have shown promise in reducing internalizing problems such as depression and anxiety in adolescents (Miu & Yeager, 2015; Schleider & Weisz, 2018). In addition, Yeager et al.'s (2011) study evidenced that a similar intervention reduced adolescents' desire

Table 3. Results of Mixed Linear Models Predicting Intervention Effects on the Outcome Trajectories over Time

DVP	Total				Traditional				Online			
Fixed effects[a]	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Intercept	0.11	0.02	4.55	.000	0.16	0.03	4.95	.000	0.06	0.02	2.96	.004
Condition	0.08	0.05	1.76	.080	0.10	0.05	2.02	.045	0.05	0.05	1.08	.283
Time	0.04	0.02	1.57	.117	0.05	0.03	1.47	.142	0.02	0.02	1.26	.210
Time × Condition	-0.09	0.04	-2.43	.016	-0.11	0.04	-2.42	.017	-0.07	0.03	-2.11	.036
Random effects[b]	*SD*	VC	χ^2	*p*	*SD*	VC	χ^2	*p*	*SD*	VC	χ^2	*p*
Level 2 intercept	0.11	0.01	96.11	.017	0.11	0.01	87.01	.082	0.13	0.02	124.64	.000
Level 2 slope	0.01	0.00	59.76	>.500	0.03	0.00	59.72	>.500	0.04	0.00	71.30	.401
DVV	Total				Traditional				Online			
Fixed effects[a]	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Intercept	0.14	0.04	3.91	.000	0.20	0.05	3.91	.000	0.08	0.03	2.85	.006
Condition	-0.00	0.05	-0.02	.984	-0.01	0.06	-0.19	.851	0.01	0.04	0.22	.824
Time	0.01	0.03	0.55	.583	0.01	0.03	0.40	.692	0.02	0.02	0.74	.458
Time × Condition	-0.04	0.04	-0.89	.373	-0.04	0.05	-0.76	.450	-0.04	0.04	-1.04	.301
Random effects[b]	*SD*	VC	χ^2	*p*	*SD*	VC	χ^2	*p*	*SD*	VC	χ^2	*p*
Level 2 intercept	0.14	0.02	105.73	.003	0.20	0.04	94.72	.002	0.10	0.01	120.52	.000
Level 2 slope	0.01	0.00	64.75	>.500	0.02	0.00	63.83	>.500	0.01	0.00	67.99	>.500

Note. DVP = dating violence perpetration; DVV = dating violence victimization; VC = variance component.
[a]with robust standard errors; [b]the random effects that were not statistically significant were eliminated in the final models.

to take revenge on bully perpetrators. In the area of DV, brief interventions using the principles of motivational interviewing have shown promising results for secondary and tertiary prevention of DV (Cunningham et al., 2013; Rothman & Wang, 2016) and novel approaches have been encouraged. Thus, considering the promising results of ITP-based interventions in reducing externalizing problems in adolescents, the main objective of this study was to explore the effect of a brief one-hour intervention aimed at promoting an incremental theory of personality in the prevention of perpetration and victimization of dating aggressive behaviors (both online – cyber dating abuse – and traditional – face-to-face dating aggression) in adolescents.

Our findings suggest that perpetration of dating aggressive behaviors toward the partner (both traditional and cyber aggressions) decrease after implementation of the ITP intervention, with effect sizes ranging from small (0.27) to medium (0.74). These results are in line with those obtained by the previous study of Yeager et al. (2011) about the effect of the same intervention in bullying situations. Some of the findings of their study could contribute to understanding the potential mechanisms through which the ITP intervention reduced perpetration of DV. For instance, they proposed that the decrease of vengeful intentions in peer conflict situations was explained through changes in adolescents' cognitions (for example, increased beliefs about the behavior as a consequence of more situational and malleable factors – as, for instance, having problems at home – and decreased beliefs that vengeance is an effective emotion-regulation strategy) and emotions (reduced feelings of anger and shame). It is well-known that partner aggression during adolescence is predominantly bidirectional (Chiodo et al., 2012; O'Leary et al., 2008) and may share more similarities with other forms of aggression at this developmental stage (as for instance, teasing and bullying) than with intimate partner aggression in adult life (Teten, Ball, Valle, Noonan, & Rosenbluth, 2009). Therefore, similar cognitive and emotional mechanisms that those found in the study of Yeager et al. (2011) may play a role in the reduction of aggressive behaviors toward the dating partner. In particular, the belief in the potential to change may modify how adolescents relate to their dating partners through various pathways. For example, interpreting the dating partner behavior as a result of more situational and malleable factors (for instance, having problems at school) would reduce feelings of shame and anger in partner conflict situations. Given that anger has showed a relevant role in the prediction of DVP (Fernández-González, Calvete, & Orue, 2018; Hettrich & O'Leary, 2007), its decrease would eventually reduce perpetration of DV. In addition, one's belief in his/her potential to change would help to react and behave differently when a conflict with the dating partner emerges.

Considering the reciprocal pattern of adolescent dating aggression and dyadic influences (Chiodo et al., 2012; O'Leary et al., 2008), we expected that changes in one's own behavior would influence the dating partner's behavior, thus also decreasing victimization. Nevertheless, the hypothesis that the ITP intervention would also decrease victimization of DV was not supported. Several potential explanations may account for this lack of result. The dyadic influence of one's partner's behavior in the other partner's behavior may require some time. However, adolescent dating relationships are characterized by a lesser level of commitment and a shorter length than partner relationships in adult life (Wekerle & Wolfe, 1999) and, thus, the influence of the intervention on DVV may not appear until later developmental stages. Nevertheless, another possibility is that the ITP intervention does not have an effect on victimization. There are no previous studies about its effect on victimization, neither in the context of romantic relationships nor in peer relationships, which hinders making conclusions and highlights the need of future research in order to clarify whether the ITP intervention is effective not only for the prevention of perpetrating aggressive behaviors but also for being a victim of aggressions.

Finally, we did not find a moderator effect of participants' sex on the effect of the ITP intervention. As mentioned, DV during adolescence is predominantly bidirectional, with similar prevalence rates of physical and emotional aggression for both sexes, or even higher rates for girls (e.g., O'Leary et al., 2008). Sex comparisons for the sample of adolescents of the present study revealed nonsignificant differences for DVP, although boys reported more acts of DVV than girls, mainly online aggressions committed through new technologies, such as for instance, using the partner's passwords (phone, social networking, email) to browse through their messages and/or contacts without permission. The reciprocal pattern of partner aggression during adolescent dating relationships and the lack of a gender-specific association of adolescence with being exclusively a perpetrator or a victim may explain the similar effect of the intervention both for girls and boys. Moreover, these sex results are consistent with those found in the previous study of Yeager et al. (2011) for peer aggression, which leads to the conclusion that the effect of the ITP intervention on externalizing problems is similar for boys and girls.

Limitations and Strengths

Within the potential limitations of this study, we must consider the relatively small sample size, which prevented the examination of the potential moderator role of other variables (for example, grade) in the effect of the ITP intervention and warrants caution in the interpretation of effect sizes of the intervention. Although the initial number of potential participants was higher, the final sample was reduced because not all the participants had begun to date. The need of early prevention of DV has been strongly emphasized by researchers in the area (e.g., Foshee & Reyes, 2009; O'Leary & Slep, 2012). However, conducting studies to examine the effect of interventions on early adolescents have to deal with the difficulty that a number of adolescents have not begun dating relationships, which hinders obtaining large samples. On the other hand, adolescents who are already involved in dating relationships may differ from those who have not yet begun to date, so that the effect of the intervention on the latter may be not the same.

Despite that, the present study has a relevant number of strengths. First, this is the first study testing the effect of a brief intervention based on ITP on adolescent dating aggression. Second, several strengths related to the study design have to be highlighted. A double-blind RCT was conducted, which has reduced internal validity threats and thus reinforced the conclusions of the study regarding the effectiveness of the intervention. In addition, the fact that participants came from different high schools increased the external validity of the study. Finally, given that the effects of brief interventions may wane over time (Schleider & Weisz, 2017b), long-term follow-ups (until one year after the implementation of the intervention) were collected.

Research and Prevention Implications

The present study was the first to explore the effectiveness of a brief intervention based on changing entity theories of personality for preventing adolescent dating aggression. Our findings suggest that the ITP intervention decreased the perpetration of aggressive acts toward a dating partner. Although further research with larger samples is needed in order to establish solid conclusions about the effect of the intervention on DV, these study findings show promise about the potential effectiveness of brief interventions for DV prevention. Schools are the natural setting to recruit children and adolescents. However, they do not always have enough time available or personal resources for the implementation of multi-session programs. Therefore, increasing our empirical evidence about

the effectiveness of a one-hour, self-applied intervention is of great relevance for moving forward in the prevention of DV.

Another relevant implication of the study findings is related to the fact that the intervention was not specifically designed for the prevention of DV, but rather for adolescents' other psychological problems (such as depression and peer conflict relationships). On one hand, some authors have claimed that DV prevention may be done indirectly through the prevention of its behavioral precursors (Foshee & Reyes, 2009). In this sense, the previous authors highlight the role of bullying, considering the results of some longitudinal studies showing evidence of the predictive role of peer aggression on DV and partner abuse. The results of our study give some support to the idea that strategies aimed at preventing peer conflict may also prevent dating aggression. On the other hand, Schleider and Weisz (2017a) found in their review that single-session interventions seem to be more effective when addressing specific intervention targets and well-defined behaviors. Thus, adapting the ITP intervention specifically to dating conflict situations may increase its effectiveness. In this sense, a relevant challenge for future research would be to compare the current ITP intervention with a new version adapted to dating conflict situations in order to explore whether the last one has a bigger effect on the prevention of DV. This will allow researchers to make decisions based on empirical evidence. Even though more general interventions may be of great relevance for universal prevention, more specific interventions could be useful for selective prevention.

Conflict of Interest

The authors of this article declare no conflict of interest.

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Appendix

Items from the DV Scale Used to Assessed Traditional and Online Dating Abuse

Traditional Dating Abuse
1. Insulting
2. Threatening to hurt
3. Throwing something at my partner
4. Criticizing my partner in public or private
5. Controlling or trying to prevent my partner from doing something that I did not want her or him to do through my comments
6. Attempting to isolate my partner from her or his friends
7. Blaming my partner for problems that occur or when I get angry
8. Hitting or pulling my partner's hair
9. Discouraging my partner so that he or she does not have hobbies that I do not share
10. Despising or criticizing something that my partner liked
11. Making my partner feel bad for doing something I did not want her or him to do
12. Somehow making it difficult for my partner to go somewhere or talk to someone
13. Kissing or touching my partner against her or his will
14. Shoving my partner
Online Dating Abuse
1. Threatening my partner through new technologies to physically harm her or him
2. Creating a fake profile of my partner on a social network to cause problems
3. Using my partner's passwords (phone, social networking, email) to browse messages and/or contacts without permission
4. Spreading secrets and/or compromised information using new technologies
5. Threatening to spread secrets or embarrassing information using new technologies
6. Using new technologies to pretend to be my partner and create problems for her or him
7. Sending insulting and/or demeaning messages using new technologies
8. Sending and/or posting photos, images and/or videos of my partner with sexual content to other people without permission
9. Using new technologies to control where my partner has been and with whom
10. Spreading rumors, gossip and/or jokes through new technologies with the intention of ridiculing my partner
11. Calling excessively to control where my partner was and with whom