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SUMMARY REPORT:

DATING VIOLENCE AMONG LATINO ADOLESCENTS - II (DAVILA - II) STUDY

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SUBMITTED BY:

Carlos A. Cuevas, Ph.D. [1], Principal Investigator

Chiara Sabina, Ph.D.[2], Co-Principal Investigator

Marc Swatt, Ph.D. [3]

and

Rebecca Cudmore, M.A. [4]

[1] School of Criminology and Criminal Justice
Northeastern University
204 Churchill Hall
360 Huntington Avenue
Boston, MA 02115
617-373-7462 Phone, 617-373-8998 Fax
c.cuevas@neu.edu

[2] School of Behavioral Sciences and Education
Penn State Harrisburg
777 West Harrisburg Pike
Olmsted Building W-311
Middletown, PA 17057
717-948-6066 Phone, 717-948-6519 Fax
sabina@psu.edu

[3] Senior Research Associate
Justice & Security Strategies, Inc.
marc.swatt@gmail.com

[4] School of Criminology and Criminal Justice
Northeastern University
cudmore.r@husky.neu.edu

PURPOSE

The purpose of this project was to collect longitudinal data on dating violence among Latino adolescents by obtaining a second wave of data for the Dating Violence among Latino Adolescents (DAVILA) Study. This study allowed for longitudinal analysis of their experiences and responses to dating violence while incorporating culturally-relevant components. The goals included (1) an examination of dating violence among Latino adolescents over time, (2) evaluating the longitudinal patterns of co-occurring victimization (polyvictimization) for Latino victims of dating violence, (3) examining the predictors of victimization patterns to understand the influence on dating violence over time (4) examining formal and informal help-seeking among Latino adolescents who experienced dating violence, and (5) determining the subsequent psychosocial impact of dating violence.

The study is one of the few, if not the only, to provide a longitudinal examination of dating violence among Latino adolescents, while simultaneously examining co-occurring victimization, help-seeking efforts, and the influence of cultural factors on the experience, impact, and responses to dating violence victimization.

PROJECT PARTICIPANTS

The DAVILA-II study consisted of a sample of 574 Latino youth and their caregiver from the original 1,427 DAVILA-I participants that agreed to be contacted for follow-up, resulting in a 40.2% retention rate. Youth were between 12 and 18 years of age at Wave 1.

The average age of adolescent participants at Wave 1 (W1) was 15.03 years ($SD = 3.58$). Gender was evenly split (52.8% female) with 76.6% of the youth being U.S. born. Most of the interviews with the adolescent participants at Wave 2 were conducted in English (83.8%) in contrast to caregivers who primarily preferred to complete the interview in Spanish (85.7%).

More than two-thirds of caregivers were married (69.8%) and the modal educational attainment for caregivers was less than high school (37.9%) with 62.1% of parents having a high-school education or higher. Almost two-thirds (66.1%) of caregivers reported a household income of less than $29,999. Adolescent participants who did not participate in W2 were more likely to date, and endorsed a higher number of dating violence incidents as well as having a higher total number of victimization experiences. Otherwise, participants lost to follow up did not differ on any demographic variables. On average, interviews lasted 54 minutes.

PROJECT DESIGN & METHODS

Participants from the DAVILA study who agreed to participate in Wave 2 were contacted for the DAVILA-II study by the survey research center that conducted the first wave of data collection. The interview was conducted using a Computer Assisted Telephone Interview (CATI) system. The survey interviewers are well trained in administering this type of survey and were specifically trained to administer the current questionnaire.

An adult legal caretaker first gave consent for underage participants and answered questions regarding the child's school performance. An IRB approved informed consent was read to the legal caretaker of the youth and the adolescent participant provided assent (or consent if they are 18 years old). Remuneration was $5 for adults and $15 for adolescent participants.

All measures for the study were administered in either English or Spanish depending on the participant's preferred language. Information regarding victimization was collected using the *Juvenile Victimization Questionnaire* (JVQ) (Hamby, Finkelhor, Ormrod, & Turner, 2005). In addition, *The Conflict Tactics Scale 2 Short Form* (CTS2S) was used to evaluate dating violence victimization (Straus & Douglas, 2004). Victims of dating violence were identified by either the CTS or a victimization on the JVQ where a date/boyfriend/girlfriend was the perpetrator. Three

scales (depression, anxiety, and hostility) from the B*rief Symptom Inventory* (BSI) were included in order to assess mental health symptoms (Derogatis, 1992). The *Frequency of Delinquency Behavior* (FDB) instrument was used to ask participants about past year delinquent acts (Dahlberg, Toal, & Behrens, 1998). School connectedness was asked using the *Brown School Connectedness Scale* (BSCS; Brown & Evans, 2002). Questions regarding formal and informal help-seeking behavior were assessed in the *Help-seeking Questionnaire* (Block, 2000; Gelles & Straus, 1988). Information about participants' minority and majority cultural identity came from the *Brief Acculturation Rating Scale for Mexican-Americans- II* (Brief ARSMA-II; Bauman, 2005). Social and family support were assessed using both the *Multidimensional Scale of Perceived Social Support* (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) and the *Mexican-American Cultural Values Scale* (MACVS) – *Familism Support Subscale* (Knight, et al., 2010).

DATA ANALYSIS

Goal 1: Frequencies were calculated to determine the past year rate of dating violence among Latino youth, including physical assaults, sexual assaults and psychological abuse by a dating partner. Data from Wave 1 were combined with the current data to determine the change in rates of teen dating violence. Rates were calculated using post-stratification weights (which included weighing for non-response). Details of how the weights were calculated are presented in the survey firm methods report available with the data archive.

Goal 2, 3, and 5: To address the objectives in *Goal 2*, the doubly robust Inverse Probability of Treatment Weighting (IPTW) estimators developed by Wooldridge (2007) allowed us to isolate the Average Treatment Effect (ATE) of dating violence victimization at Wave 1 on other forms of victimization (conventional crime victimization, peer/sibling victimization, sexual victimization, and child maltreatment), as well as Wave 2 polyvictimization

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and perpetration of dating violence. The objectives under *Goal 3* involve identifying critical predictors associated with dating violence victimization at Wave 1 and Wave 2. The endogenous treatment model (see Guo & Frasier, 2014; Maddala, 1983) was used to examine the impact of predictor variables on dating violence victimization at Wave 1 and Wave 2. Various marginal effects were used to identify the ATE associated with dating violence victimization at Wave 1 as well as the impact of various predictors at Wave 1 and Wave 2. The objectives under *Goal 5* are to examine the impact of dating violence victimization at Wave 1 on psychological, social, and academic outcomes at Wave 2. We again used the doubly robust IPTW estimators discussed previously to isolate the ATE of dating violence victimization on depression, anxiety, hostility, school connectedness, school performance, and delinquency at Wave 2.

Goal 4: To examine help-seeking among Latino youth who were victims of dating violence, we first calculated frequencies for each of the different types of formal service utilization and informal help-seeking. To establish the factors associated with service seeking among revictimized Latino adolescents, we conducted a multinomial logistic regression with help-seeking profile as the dependent variable and victimization severity, perpetrator, victimization type, and socio-cultural factors as predictors.

All analyses used the weights that adjust for age, gender, probability of selection, Latino neighborhood density, and non-response bias. Detailed description of the weighting procedure is available in the methods report uploaded with the data archive and codebook.

FINDINGS

Goal 1, detailed in Table 1, examined the rates of victimization across both waves with the weighted rates of dating violence victimization remaining consistent across both waves.

The gender differences were not consistent with Wave 1 results. There were no significant differences in victimization rates at Wave 2, unlike Wave 1 (Cuevas, Sabina, & Bell, 2014), with exception of dating violence sexual victimization, which was significantly higher for girls (1.9% vs. 8.7%, $p < .01$).

Table 1

Rates of Dating Violence Victimization Based on the Combined CTS2S and JVQ Items

		Wave 1 ($N = 1,525$)			Wave 2 ($N = 574$)	
Dating Violence	n	Unweighted %	Weighted %	n	Unweighted %	Weighted %
Any Dating Violence	256	16.8	19.5	99	17.3	18.9
Physical Dating Violence	78	5.1	6.6	23	4.0	6.8
Sexual Dating Violence	74	4.9	5.6	21	3.7	5.2
Stalking Dating Violence	10	0.7	1.0	4	0.7	0.3
Psychological Dating Violence	200	13.1	14.8	85	14.8	15.5

For all the models considered in *Goal 2* as well as *Goal 5*, a number of covariates measured at Wave 1 were included in both the model for the propensity score as well as the regression equation. These variables included:

- Demographic variables (age, sex, immigrant status, parental socioeconomic status, whether parents were married/cohabitating, and the number of children in the household)
- Psychological symptoms (depression, anxiety, and hostility)
- Anglo and Latino orientation
- Total social support assessed across a number of domains
- Polyvictimization measured as an index of juvenile victimization (from the JVQ)
- Number of delinquent incidents
- The inverse Mill's ratio (IMR) from a probit regression predicting onset of dating behavior[1]

The model for Wave 2 dating violence perpetration also included the measure of dating violence perpetration at Wave 1.

The ATEs from these models are presented in Table 2. These suggest that the impact of Wave 1 dating violence victimization on other types of victimization at Wave 2 is minimal. The ATE of Wave 1 dating violence victimization was non-significant for conventional crime victimization, peer victimization, sexual victimization, child maltreatment, or polyvictimization. This suggests that dating violence victimization does not independently increase the risk for other types of victimization or polyvictimization, but rather associations between these variables observed in cross-sectional studies are due to factors that inflate the risk of overall victimization.

Table 2

Impact of Wave 1 Dating Violence on Wave 2 Victimization

Wave 2 Victimization			95% CI	
	ATE	Robust SE	Upper	Lower
Conventional Crime	0.054	(0.047)	-0.039	0.148
Peer Victimization	-0.044	(0.055)	-0.152	0.063
Sexual Victimization	0.048	(0.037)	-0.024	0.120
Child Maltreatment	-0.048	(0.033)	-0.113	0.017
Polyvictimization	0.182	(0.215)	-0.239	0.603

* p < .05, ** p < .01, *** p < .001

In order to disentangle the impact of Wave 1 dating violence victimization on further dating violence victimization at Wave 2, we employ a variant of the endogenous treatment effects model. The advantage of this model is that it allows for a correlation between the treatment and the outcome equation that captures the effects of unmeasured confounders.[2] The

previously identified covariates were included in the Wave 1 model for Dating Violence. Also

included was a measure of the number of romantic relationships at Wave 1. Wave 1 demographic

variables, Wave 2 measures of the remaining variables, and Wave 1 dating violence

victimization were included in the model for Wave 2 dating violence. Unfortunately, the

coefficients from this model are not readily interpreted without further transformation.[3] In order

to increase the interpretability of these results for the Wave 1 equation, the average marginal

effects can be interpreted as the percentage change in the probability of experiencing dating

violence at Wave 1 associated with a one-unit change in the covariate.[4] Two separate marginal

effects were calculated for the Wave 2 equation by decomposing the marginal effect for those

who did not experience dating violence at Wave 1 and those who did. The average marginal

effects are presented in Table 3.

Table 3

Average Marginal Effects for Endogenous Probit Model (N = 532)

Wave 1 Dating Violence			Wave 2 Dating Violence			
Variable			W1 DV = 0		W1 DV = 1	
	Value	SE	Value	SE	Value	SE
Gender[1]	-0.426	(1.185)	1.373	(1.295)	0.584	(0.571)
Age[1]	0.848	(0.734)	-0.248	(1.005)	-0.105	(0.425)
Immigration Status[1]	-1.654*	(0.788)	-0.795	(0.526)	-0.347	(0.270)
Socioeconomic Status[1]	-0.523	(0.451)	-0.167	(0.387)	-0.071	(0.164)
Intact Family[1]	-0.311	(0.519)	0.009	(0.813)	0.004	(0.345)
# of Children in HHLD[1]	-0.199	(0.307)	-0.369*	(0.174)	-0.156	(0.085)
Acculturation - Anglo	-0.131	(0.344)	-0.085	(0.279)	-0.036	(0.120)

Acculturation - Latino	0.286	(0.232)	-0.132	(0.217)	-0.056	(0.093)
Social Support	-0.369	(0.201)	-0.535*	(0.225)	-0.227	(0.122)
Depression	-0.038	(0.036)	0.024	(0.074)	0.010	(0.032)
Anxiety	0.107*	(0.040)	-0.017	(0.033)	-0.007	(0.014)
Hostility	0.085	(0.062)	-0.074	(0.153)	-0.031	(0.065)
Delinquency	0.003	(0.008)	0.004	(0.006)	0.002	(0.002)
# of Relationships	0.563***	(0.158)	0.746***	(0.207)	0.316*	(0.140)
Polyvictimization	0.124	(0.125)	0.325*	(0.156)	0.138	(0.072)
ATE for W1 Dating Violence			0.385***	(0.105)		

$* p < .05, ** p < .01, *** p < .001$

1. The Wave 1 value was used in both equations

Table 4

Impact of Wave 1 Dating Violence on Wave 2 Outcome Variables

Wave 2 Outcome			95% CI	
	ATE	Robust SE	Upper	Lower
Depression	0.027	(1.793)	-3.487	3.540
Anxiety	3.093	(1.763)	-0.363	6.549
Hostility	3.199*	(1.423)	0.409	5.989
School Connectedness	-3.346*	(1.700)	-6.678	-0.015
School Performance	-0.213*	(0.054)	-0.320	-0.107
Delinquency	38.054	(62.909)	-85.245	161.354
Dating Violence Perpetration	0.026	(0.061)	-0.094	0.146

$* p < .05, ** p < .01, *** p < .001$

In the equation for dating violence victimization at Wave 1, only immigration status, anxiety, and the number of relationships were statistically significant. The average marginal effects from this equation indicate that a one unit change in anxiety is associated with a 10.7% increase in the probability of Wave 1 dating violence victimization and a one unit change in the number of relationships is associated with a 56.3% increase in the probability of Wave 1 dating violence victimization. However, children who are immigrants are 165% less likely than non-immigrants to experience dating violence victimization at Wave 1.

In the Wave 2 equation, dating violence victimization at Wave 1 is significant and the ATE is approximately 0.385, implying that victims of dating violence at Wave 1 have on average a .385 higher probability of victimization at Wave 2 compared to non-victims. This suggests that dating violence victimization experiences places youths at an increased risk for either continuation of dating violence or subsequent revictimization. The number of children in the household, Wave 2 social support, and the number of relationships at Wave 2 were also statistically significant.

When decomposing the marginal effect for victims and non-victims, as seen in Table 3, some notable differences emerge. Most of the factors associated with dating violence victimization at Wave 2 are only significant for individuals who did not experience dating violence at Wave 1. An increase in the number of kids in the household was associated with a 36.9% decrease ($p < .05$) in the probability of Wave 2 dating violence victimization for those who were not previously victimized at Wave 1, but only a 15.6% decrease (*n.s.*) in those who were victimized at Wave 1. Similarly, an increase in Wave 2 social support was associated with a 53.5% decrease ($p < .05$) in the probability of victimization at Wave 2 among those who were not victimized at Wave 1, but only a 22.7% decrease (*n.s.*) for those who were previously

victimized. An increase in the number of victimization experiences at Wave 2 was associated with an increase of 32.5% in the probability of victimization ($p < .05$) for those who were not previously victimized, but only a 13.8% increase (*n.s.*) in those who were previously victimized. The only variable that carried statistically significant effects for both respondents who were previously victimized and who were not was the number of romantic relationships. An increase in the number of romantic relationships was associated with an increase of 74.6% ($p < .05$) in the probability of victimization among those who were not previously victimized, but an increase of only 31.6% ($p < .05$) for those who were previously victimized. Given the sizable ATE for Wave 1 dating violence victimization, these results suggest that many of the covariates examined are more important for understanding the onset of dating violence victimization rather than the continuation of dating violence victimization. Further, these findings suggest that previous dating violence victimization experiences puts youths at an increased risk for either continuation of dating violence or subsequent revictimization at a later time period.

In order to assess the impact of dating violence victimization on a number of social and psychological outcomes under *Goal 5*, we again return to the doubly robust IPTW method used in *Goal 2*. The same covariates and model specification was used for these models, the difference is that the outcomes considered were Wave 2 depression, anxiety, hostility, school connectedness, school performance (parent reported), delinquency, and dating violence perpetration. Table 4 presents the ATEs associated with these outcomes and dating violence victimization at Wave 1.

The ATEs for the impact of Wave 1 dating violence victimization on Wave 2 depression, anxiety, and delinquency were non-significant. However, the ATE for Wave 2 hostility was statistically significant and victims of dating violence reported 3.20 units higher ($p < .05$), which

corresponds to an increase of approximately 0.378 standard deviations, on the BSI hostility scale. Similarly, Wave 1 victims reported 3.35 units lower ($p < .05$), which corresponds to a decrease of approximately .351 standard deviations, on the shortened Brown School Connectedness Scale.[5] There was no significant relationship between dating violence victimization at Wave 1 and dating violence perpetration at Wave 2 after controlling for these common risk factors and dating violence perpetration at Wave 1. Dating violence victimization fails to have an enhancement effect on later dating violence perpetration after controlling for baseline risk factors and earlier dating violence perpetration.

Goal 4 could not be fully evaluated due to the low sample size across waves for help-seeking; however, an exploratory analysis showed that few teens sought help for dating violence during Wave 1 ($n = 68$) and of the participants who were re-contacted for Wave 2, half experienced dating violence one year later ($n = 12$). Formal help-seeking during Wave 1 was marginally related to not experiencing dating violence during Wave 2 ($AOR = .127$, $p = .09$).

IMPLICATIONS

The results suggest that dating violence remains consistent over time. Youth who are in violent relationships are revictimized either due to continued victimization within the same relationship or by revictimization experiences across multiple relationships. Contrary to results from the first wave of DAVILA, there were no significant differences between genders, with the exception of a significant difference for girls having a higher rate of sexual victimization at Wave 2. Perhaps gender differences in dating violence are not consistent over time, potentially explaining some of the conflicting research on gendered victimization rates. Alternatively this may be related to later dating by girls, which would delay the opportunity for dating violence.

While being a victim of dating violence is associated with an increased risk of dating violence victimization at Wave 2, dating violence is not uniquely associated with other forms of victimization a year later. This is contrary to a substantial body of polyvictimiztion research showing the coexistence of various forms of victimization (Cuevas, et al., 2014). These results suggest that the co-occurrence of other forms of victimization with dating violence takes place concurrently and may not be predictive of later victimization. Furthermore, our analytic strategy accounted for a number of control and potential explanatory variables, and not solely presented as bivariate associations, potentially explaining the lack of relationship with other forms of child victimization. Possibly other mediating variables may explain the connection between dating violence and other subsequent forms of victimization (e.g., total victimization). Interestingly, evaluation of other forms of victimization at Wave 1 were predictive of dating violence victimization at Wave 2, suggesting that other forms of violence may set up youth to be victims of dating violence, perhaps when they enter a dating relationship or due perceived vulnerability.

There are four key factors that also showed themselves to play a role in dating violence revictimization: social support, hostility, school connectedness, and the number of children in the household. Notably, none of the cultural factors (e.g., immigrant status, Anglo or Latino orientation) were significant. While social support was associated with a decreased risk of dating violence revictimization, the results suggest that the effect is more likely associated with preventing non-victims from being victimized rather than preventing victims from being revictimized. Essentially, social support appears to function as primary prevention for Latino youth rather than secondary or tertiary prevention. Along the same lines, a greater number of children in the household was also associated with a decreased risk of subsequent victimization, which may be a proxy for familial support that assists in the prevention of dating violence.

While dating violence has been found to be associated with various forms of emotional distress, with this sample, hostility was the emotional reaction connected to the dating violence victimization. For Latino youth, the expression of anger may be the most notable emotion as a result of dating violence.

The link between dating violence and school connectedness showed victims being less connected to school. This points to a potential intervention point, as engagement with the school may help serve as another source of support for victims. Given the importance of school and the amount of time youth spend there, the engagement of adolescents to the school environment may serve as a mechanism to aid and support victims of dating violence who appear to be at risk to fade away from this resource. Relatedly, while the help-seeking data was insufficient, exploratory analysis points to the possibility of formal help-seeking decreasing the risk of experiencing dating violence among Latino youth. This finding would be consistent with results with adult Latino women (Cuevas, et al., 2014).

Overall, the longitudinal analyses give some guidance for possible intervention in decreasing the risk of dating violence among Latino youth. School connectedness and social support appear to be key potential intervention points for ameliorating the risk of dating violence. As we have argued before, familial support may be a key component in helping prevent victimization. In addition, school is a key place for intervention. While culturally appropriate programmatic suggestions are beyond the scope of this analysis, school programming to address violence is potentially a primary point of intervention for Latino adolescent. School- and family-based prevention efforts appear to have the most potential to deal with dating violence among Latino youth, which shows consistency with what may be helpful to non-Latino youth.

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[1] This was done to control for the probability that the respondent would have been on at least one date or had at least one relationship over the year prior to the administration of the survey. This model included age, gender, parent's socioeconomic status, number of kids in the household, and psychological symptoms (depression, anxiety, hostility) all measured at Wave 1. All children in the sample had a non-zero probability of dating in the prior year. Introducing the IMR into the model produces a model consistent with the two-step Heckman correction for sample selection (Heckman, 1978, 1979).

[2] Because the outcome is dichotomous, the estimated model here uses a probit for the outcome rather than a linear model that has been traditionally used (e.g. Maddala, 1983). Probit was used in lieu of logit because it easily generalizes into multivariate forms that can be jointly estimated using maximum likelihood (see Roodman, 2011). In particular, Roodman's (2011) *cmp* command for Stata 13.0 allowed us to estimate these models.

[3] Due to space limitations, the table with the original coefficients and standard errors are omitted from this report. This table can be obtained by contacting the first author of the report.

[4] The average marginal effect is calculated by changing the value of only the variable of interest and calculating the difference in the predicted outcome for each case. Then these values are averaged over the dataset, essentially producing the average effect that this variable would have across the current sample (see Williams, 2012 for more discussion). For ease of interpretation, the semi-elasticity is discussed which enables statements about the percentage change in the probabilities (rather than a raw probability increase or a predicted increase in the untransformed linear combination). For continuous variables, the marginal effect is based on the derivative which is the instantaneous change at a point. The one unit language is not technically correct but is a convenience as this statement is approximate if the slope of the tangent line does not considerably change over the unit. For discrete variables, the marginal effect is the discrete change associated with a one unit difference. Average marginal effects for the Inverse Mills term that captures the probability of dating are omitted as these do not have a sensible interpretation.

[5] Unfortunately, the Brown scale was only administered to a small sample of respondents at Wave 1 as it was dropped for time considerations. Because of this it was not possible to control for school connectedness at Wave 1. Correspondingly, it cannot be ascertained whether the impact of Wave 1 victimization was due to a decrease in school connectedness after the victimization experience or that victims had pre-existing lower connectedness prior to victimization at Wave 1.