Presentation Outline

- Survey overview
- Summary of survey results
- Nonresponse analysis strategy
- Nonresponse analysis results
- Nonresponse adjustment
- Nonresponse adjustment assessment
- Summary and discussion

DAVILA Study Overview

- Designed to examine stressful events and victimization prevalence among Latino adolescents with a focus on physical, sexual and psychological dating violence
- CATI survey conducted by Abt SRBI on behalf of The Pennsylvania State University and Northeastern University
- Funded by two grants from the National Institute of Justice Office of Justice Programs
Motivation for the Study

- Latino adolescents are at higher risk of dating violence compared to white adolescents
- They are also understudied, hard-to-reach and disproportionately impacted by nonresponse
- As a result, dating violence estimates for this group are likely to be underestimated by general population surveys
- There is much to learn about the role of cultural influences as risk and protective factors associated with dating violence

DAVILA Survey Design

DAVILA I Baseline Survey
September 2011 – February 2012

- Disproportionate stratified national RDD landline sample supplemented by list-assisted Hispanic surname sample
- HHs screened for Hispanic children age 12-18
- Short parent/adult caretaker CATI survey with consent to interview a randomly selected Hispanic youth in eligible age range; youth assent prior to youth CATI interview
- English and Spanish; 45 minutes
- $5 parent/caretaker; $10 youth (conditional)

DAVILA II Follow-up Survey
February 2013 – August 2013

- Eligibility required DAVILA I youth respondent to agree to be contacted for a future survey
- Eligible households mailed an advance letter with contact information update form
- Youths/young adults 18 or older could be interviewed without parental consent
- Adult parent/caretaker respondent not required to be same as DAVILA I as long as familiar with youth
- English and Spanish; 54 minutes
- $5 parent/caretaker; $15 youth (conditional)
DAVILA Survey Results

- AAPOR RR4 = 37.8% for the RDD landline sample, 33.0% for the list-assisted surname sample and 36.2% overall
- 1,525 HHs responded including 25 partial interviews
- Among responding HHs, 1,427 youth (93.6%) agreed to be contacted for a future survey
- Baseline data were weighted to correct for the unequal selection by Hispanic density, number of phone lines and number of children in HH, then adjusted to the age by gender distribution for Hispanic children 12-18 using the 2010 ACS PUMS

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DAVILA II Follow-up Results

- Among the eligible 1,427 HHs, 574 (40.2%) completed the DAVILA II survey
- AAPOR RR4 = 36.2% x 40.2% = 14.6% overall
- Youth 18 or older at the time of DAVILA II were less likely to be contacted, more likely to refuse at both the HH and respondent levels and less likely to complete the follow-up survey compared to those 17 and younger
- Nonresponse was positively associated with the number of dating violence episodes
- Clearly, a nonresponse analysis and adjustment was warranted

DAVILA II Nonresponse Adjustment Strategy
Measure Nonresponse Bias at Key Attrition Points

- Identified a set of demographic, behavioral, and cultural risk and protective factors potentially associated with dating violence
- Compared the 1,427 vs. 98 HHs where the youth respondent agreed vs. did not agree to be contacted for a future survey, applying the original DAVILA I weights
- Compared the 574 DAVILA II respondents to the 951 DAVILA II nonrespondents, applying the original DAVILA I weights

Potential Predictors of Dating Violence – DAVILA I Data

- Demographic
  - Parent gender
  - Youth gender
  - Parent age
  - Youth age
  - Parent country of birth
  - Parent marital status
  - Number of children in HH
  - HH income
  - Parent education level
  - Youth interview language
  - Youth identifies as LGBT

- Behavioral/Cultural
  - Parent rating of youth’s school performance
  - Youth Anglo orientation
  - Youth Latino orientation
  - Youth dated in past 12 months

Dating Violence Outcome Measures – DAVILA I Data

- Youth was a dating violence victim in the past 12 months (yes/no)
- Count of dating violence episodes in past 12 months
- Average number of dating violence episodes in past 12 months among all youth respondents
- Average number of dating violence episodes in past 12 months among youth dating violence victims

Significant t-tests for Agree vs. Disagree to Future Contact

- Youths who dated in past 12 months were more likely to agree ($p = 0.002$)
- Youths with higher mean Latino orientation scale scores were more likely to agree ($p = 0.043$)
**Significant t-tests for DAVILA II Respondents vs. Nonrespondents**

- Youths who dated in past 12 months were less likely to respond ($p = 0.010$)
- Youths who were dating violence victims in the past 12 months were less likely to respond ($p = 0.001$)
- Youths with 3 or more dating violence episodes in past 12 months were less likely to respond ($p = 0.015$)

**Develop Propensity Model for DAVILA II Respondents**

- Use logistic regression to predict DAVILA II response (binary outcome)
- Include dating violence predictors and outcomes from DAVILA I
- Include number of call attempts to complete the DAVILA I interview
- Use the AIC to select the best fitting model
- Assess model fit with the Archer-Lemeshow fit $p$-value

**Propensity Model Odds Ratios $< 1$**

- Male DAVILA I parent/caretaker respondent
- DAVILA I parent/caretaker respondent not married or living with significant other
- 5 or more children vs. 1 child in household
- Youth self-identified as LGBT
- Youth dated in 12 months prior to DAVILA I
- 4 or more vs. 1-3 call attempts to complete DAVILA I

**Propensity Model Odds Ratios $> 1$**

- Interaction between years in the U.S. and parent/caretaker’s place of birth – born in Mexico or elsewhere in Latin America and in the U.S. for 10-20 years
- 2-4 children vs. 1 child in household
- Higher Latino orientation scale score
- Older DAVILA I parent/caretaker
**Construct Nonresponse Adjusted Weights**

- Multiply the original DAVILA I weights by the inverse unit response propensity for the DAVILA II respondents
- Calibrate the nonresponse adjusted weights to match the sex-by-age distribution of the DAVILA I youth population

**Apply and Assess Nonresponse Adjusted Weights**

- Apply the original DAVILA I weights to the DAVILA I estimates based on the 1,525 DAVILA I respondents
- Apply the nonresponse adjusted weights to the DAVILA I estimates based on the 574 DAVILA II respondents
- Identify biased estimates as those with significant t-test differences between the DAVILA I estimate based on 1,525 respondents applying the original DAVILA I weights and the same estimate based on 574 DAVILA II respondents applying the nonresponse adjusted weights

**DAVILA II Nonresponse Adjustment Results**

**Successful Nonresponse Adjustment Results**

<table>
<thead>
<tr>
<th>Observed Bias (statistically significant t-test p-value)</th>
<th>DAVILA II Respondents vs. Nonrespondents</th>
<th>DAVILA I Estimates Based on 574 DAVILA II Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth dated in past 12 months</td>
<td>$p = 0.010$</td>
<td>$p = 0.068$</td>
</tr>
<tr>
<td>Youth Latino orientation scale score</td>
<td>$p = 0.097$</td>
<td>$p = 0.033$</td>
</tr>
</tbody>
</table>

| Youth dated in past 12 months                          | $p = 0.962$                              | $p = 0.839$                                           |
Unsuccessful* Nonresponse Adjustment Results

<table>
<thead>
<tr>
<th>Observed Bias (statistically significant t-test p-value)</th>
<th>DAVILA II</th>
<th>DAVILA I Estimates Based on 574 DAVILA II Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean dating violence episode count (all)</td>
<td>p = 0.001</td>
<td>p = 0.004</td>
</tr>
<tr>
<td>Mean dating violence episode count (victims)</td>
<td>p = 0.001</td>
<td>p = 0.002</td>
</tr>
<tr>
<td>School performance rated below average</td>
<td>p = 0.079</td>
<td>p = 0.052</td>
</tr>
</tbody>
</table>

*Assumes standard p-values.

Graphic Illustration of Unbiased Estimates*

Unsuccessful NR Adjustments for DAVILA I Correlations with Response Propensity

<table>
<thead>
<tr>
<th>DAVILA I Variables</th>
<th>Pearson Correlations</th>
<th>Semi-partial Correlations</th>
</tr>
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<tbody>
<tr>
<td>3+ dating violence episodes (categorical)</td>
<td>p = 0.001</td>
<td>p = 0.000</td>
</tr>
<tr>
<td>Mean dating violence episode count (all)</td>
<td>p = 0.000</td>
<td>p = 0.002</td>
</tr>
<tr>
<td>Mean dating violence episode count (victims)</td>
<td>p = 0.003</td>
<td>p = 0.002</td>
</tr>
<tr>
<td>School performance rated below average</td>
<td>p = 0.434</td>
<td>p = 0.008</td>
</tr>
</tbody>
</table>

*95% confidence intervals

Graphic Illustration of Nonresponse Adjustments*

*95% confidence intervals
### Successful NR Adjustments for DAVILA I Correlations with Response Propensity

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<th>Pearson Correlations</th>
<th>Semi-partial Correlations</th>
</tr>
</thead>
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<tr>
<td>Male youth respondent (-)</td>
<td>$p = 0.037$</td>
<td>$p = 0.742$</td>
</tr>
<tr>
<td>School performance rated average (-)</td>
<td>$p = 0.005$</td>
<td>$p = 0.555$</td>
</tr>
<tr>
<td>School performance rated above average (+)</td>
<td>$p = 0.008$</td>
<td>$p = 0.249$</td>
</tr>
<tr>
<td>Parent/caretaker married (+)</td>
<td>$p = 0.015$</td>
<td>$p = 0.983$</td>
</tr>
<tr>
<td>Parent/caretaker age (+)</td>
<td>$p = 0.027$</td>
<td>$p = 0.380$</td>
</tr>
<tr>
<td>Youth was dating violence victim (binary) (-)</td>
<td>$p = 0.006$</td>
<td>$p = 0.464$</td>
</tr>
<tr>
<td>Two dating violence episodes (categorical) (+)</td>
<td>$p = 0.002$</td>
<td>$p = 0.914$</td>
</tr>
</tbody>
</table>

### Summary and Discussion

#### DAVILA II Respondents vs. Nonrespondents

- Youths who dated in the 12 months prior to their DAVILA I interview were more likely to agree to be contacted for a future interview.
- Older youths were less likely to be contacted, more likely to refuse and less likely to participate in DAVILA II.
- Youths who dated in the 12 months prior to DAVILA I were less likely to participate in DAVILA II.
- The higher the number of dating victimization episodes, the lower the likelihood of participating in DAVILA II.

#### Biased Estimates Fixed with Nonresponse Adjustment (Difference Tests)

- Youth school performance rated below average (overestimated).
- Average count of dating violence victimizations (underestimated).
- Youth Latino orientation scale score (overestimated).
Biased Estimates Fixed with Nonresponse Adjustment (Correlations)

- Youth gender male
- Average and above average school performance
- Married parent/caretaker respondent
- Youth was a dating violence victim
- Count of dating violence episodes (0 and 2)
- Parent/caretaker age
- Latino orientation scale score

Discussion

- Nonresponse bias diagnostics were provided by t-tests for DAVILA II respondents vs. nonrespondents, significant predictors in the response propensity model, and Pearson and semi-partial correlations of response propensity with DAVILA I outcomes
- The nonresponse bias analysis identified subgroups of Latino youth at risk of attrition in dating violence and possibly other victimization research

Conclusions

- Latino orientation, foreign vs. U.S. born parents, and parent years in the U.S. (cultural factors) influenced response propensity
- Nonresponse adjustments using the inverse propensity scores helped remove some of the nonresponse biases
- The workflow of nonresponse diagnostics and adjustments used in this study can be applied to other longitudinal studies

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