Relationship violence typologies and condom use in young adult dating relationships

Jennifer Manlove, Kate Welti & Quentin Karpilow, Child Trends

Extended Abstract - DRAFT

Young adults have disproportionately high rates of sexually transmitted diseases (STDs) and unintended pregnancies in the U.S. compared with other age groups (Finer and Zolna 2011), and these rates are due, in part, to non-use or ineffective use of condoms and other contraceptives (Mosher and Jones 2010; Welti, Wildsmith et al. 2011). Previous research has found that relationship context and partner characteristics are associated with contraceptive use and condom use among young adults. Relationship violence--often called intimate partner violence (IPV)--is one dimension of romantic relationships that may influence condom use among young adults. An expanding research literature using primarily local-area samples, clinic-based samples and qualitative data suggests that condom use is lower in more violent relationships (Wingood and DiClemente 1997; Kalichman, Williams et al. 1998; Neighbors, O'Leary et al. 1999; Raj, Santana et al. 2006; Moore, Frohwirth et al. 2010; Alleyne, Coleman-Cowger et al. 2011); however, relatively limited analyses of national surveys have assessed this association (Coker 2007). Additionally, existing research suggests that multiple dimensions of IPV matter, including the severity and frequency of violence, as well as whether the violence is perpetrated by one versus both partners (Marshall 1992; Gray and Foshee 1997; Gordon 2000; Whitaker, Haileyesus et al. 2007).

This study extends previous research by using nationally representative data to: 1) assess male and female reports of experiencing and perpetrating intimate partner violence; and 2) to link various dimensions of IPV to condom use among men and women in dating relationships. We measure IPV in two ways: first, by examining separate measures of the severity, frequency and perpetrator of the violence – as reported by the respondent about themselves and their partner; and second, by using latent class analysis to create violence typologies that combine these dimensions. We examine the dimensions of IPV separately by gender and assess whether the association between violence and condom use differs by gender. Ultimately, a better understanding of IPV and its association with condom use will inform program efforts to reduce high rates of STDs and unintended pregnancy among young adults in the U.S.

Conceptual Framework

Our analyses were motivated by two approaches – power dynamics and relationship turbulence. A power dynamics approach suggests that IPV occurs when a power imbalance exists within a couple's relationship and reflects one partner's greater power and control over another partner (Coleman and Straus 1986; Babcock, Waltz et al. 1993; Pence and Paymar 1993; Gary-Little, Baucon et al. 1996; Sagrestano, Heavey et al. 1999; DiClemente, Wingood et al. 2002; Manning, Flanigan et al. 2009). Because prior research finds that power imbalances in relationships reduce the ability of individuals to use condoms, a power dynamics approach would posit that violent relationships will be linked to reduced condom use (Wingood and DiClemente 1997; Amaro and Raj 2000; Wingood, DiClemente et al. 2001; Pulerwitz, Amaro et al. 2002; Manning, Flanigan et al. 2009). Generally, IPV in these studies involves male-dominated violence and is measured as a respondent's (generally a female's) victimization by a partner (partner-initiated violence), although some research among males has also found negative associations between self-reported perpetration of violence (respondent-initiated violence) and condom use (Carney, Buttell et al. 2007; Coker 2007).

Under a power dynamics approach, the severity or frequency of violence will also likely matter (Neighbors, O'Leary et al. 1999; Roberts, Auinger et al. 2005). For example, one study of male inmates found that those who reported severely violent acts were more likely than those who reported either no violence or moderate violence to respond negatively to their partners' request to use condoms (Neighbors, O'Leary et al. 1999). Other research with teens has found that while both physical and verbal violence were associated with lower condom use, the association was strongest for physical violence (Roberts, Auinger et al. 2005).

However, not all violence is the result of power imbalances. For example, some couples experience violence that is reciprocal, perpetrated by both partners (Johnson 1995). This research describes less severe, less frequent, and more gender-balanced violence as "common couple" violence, and distinguishes it from violence in which one partner is trying to exert control over the other (Johnson 1995; Whitaker, Haileyesus et al. 2007). Some researchers posit that most intimate partner violence, especially violence captured in large-scale surveys, can be categorized as common couple violence in which conflict occasionally gets "out of hand" leading usually to "minor forms of violence" and rarely escalating into more serious violence (Johnson 1995). Other research, however, has highlighted that some of the most severe violence and violence escalation occurs in relationships in which both partners are violent (Whitaker, Haileyesus et al. 2007), suggesting another form of reciprocal IPV, distinct from common couple violence, in which conflict leads to increasingly violent interactions and retaliation that can ultimately lead to injury. Using data from a national survey, Whitaker et al (2007) find that relationships with reciprocal violence (violence by both partners) had a higher frequency of violence (for women perpetrators) and a greater likelihood of injury perpetrated by both male and female partners. A relationship turbulence approach would suggest that volatility in relationships experiencing reciprocal violence (both those with and without high frequency and severity) may impair couple-level decision-making about condoms, without necessarily reflecting an unequal power balance. Some research has found links between greater overall relationship conflict and reduced condom use (Coker 2007; Manlove, Welti et al. 2011). Our study will extend this research by further examining relationships that experience reciprocal violence to further distinguish between couples in which both partners have similar frequency and severity of violent acts and those in which one partner perpetrates more severe or frequent violence than the other partner.

Both approaches highlight the importance of examining gender differences in the associations between IPV and condom use. Most administrative information collected on IPV shows a higher prevalence of male-perpetrated violence (Johnson 1995; Carney, Buttell et al. 2007), but data from national surveys finds a relatively high percentage of female-perpetrated violence (Johnson 1995; Whitaker, Haileyesus et al. 2007). Some research indicates that males and females experience different consequences of violence, and males tend to perpetrate more severe forms of violence (Swan, Gambone et al. 2008). However, other research suggests that males, as well as females, may be subject to the negative effects of experiencing IPV (Carney, Buttell et al. 2007; Shuler). Yet, while studies have linked female victimization (reported by the female) and male-perpetrated violence (reported by the male) to reduced condom use, limited research has assessed whether female self-reports of violence perpetration or male reports of partner-dominant violence are linked to reduced condom use (Carney, Buttell et al. 2007; Coker 2007).

Thus, based on a power dynamics approach, we hypothesize that violence that is more frequently or severely perpetrated by one partner (partner-initiated or respondent-initiated violence) will be associated with reduced condom use. Further, based on a relationship turbulence approach, we

hypothesize that relationships experiencing reciprocal violence will also have reduced odds of condom use; with the association being stronger in relationships where there is more frequent and more severe violence. Because some research suggests that male-perpetrated violence is more severe, we also hypothesize that the association between female-perpetrated violence and reduced condom use will be weaker than for male-perpetrated violence.

We extend previous research by jointly examining several dimensions of relationship violence – including the severity, frequency, and perpetrator of violence – and how they are associated with condom use among males and females. In particular, we create violence typologies based on respondent reports of their own – and their partner's -- frequency and severity of violence.

Data and Measures

We used data from Wave III of the National Study of Adolescent Health (Add Health), a nationally-representative sample of 27,000 youth in grades 7-12 during the 1994-95 school year (Wave I). Respondents were re-interviewed in 2001-02, when they were aged 18-28 (Wave III), and were asked questions about up to three previous romantic relationships, for a total of 42,334 relationships. The questions about IPV were only asked of the 20,277 relationships that were identified as being a recent sexual relationship or an "important relationship," based on self-identification by the respondent or by the length of the relationship (Harris and Udry 2008). Because we were interested in the links between IPV and condom use among young adult heterosexual dating couples, we omitted relationships that were classified as non-heterosexual or non-dating (n=7,580), those in which sex had not occurred (n=2,867), and those in which the respondent was older than 25 years old (n=46). For the purposes of generalization, we omitted relationships reported by race/ethnic groups other than white, black, Hispanic, or Asian respondents (n=68). Additionally, we omitted those without valid sample weights (n=565). Finally, we omitted those who were missing on the dependent variable (condom use at most recent sex, n=37). The final analytic sample included 8,599 relationships (4,641 female-reported relationships and 3,958 male-reported relationships) from 6,465 respondents.

Dependent Variable: Condom Use. For each relationship, respondents were asked if they used a *condom at their most recent sexual intercourse* with that partner. We created a binary measure of condom use at last sex. Missing reports of condom use were replaced with 0 if the respondent reported not using any contraceptive with that partner at most recent sex.

Independent Variables: Intimate Partner Violence. We constructed measures of IPV using six questions that documented the severity, frequency, and perpetrator of relationship violence in the Add Health sample. Specifically, for each relationship, respondents were asked the number of times in the previous year that they had (1) threatened, threw something at, pushed, or shoved their partner; (2) slapped, hit, or kicked their partner; or (3) injured their partner. For each severity-level of violence (threatening, hitting, injuring), respondents were also asked the number of violent acts perpetrated against them by their partner. Using this information, we created a four-category Severity of Violence scale that indicated the most severe type of violence that either the respondent or partner perpetrated in the prior year. In a separate variable, we captured IPV frequency by summing the total number of respondent-perpetrated and partner-perpetrated violent acts across the three violence-severity categories.

We also constructed a six-category measure of IPV perpetration: respondent-only violence; partner-only violence; respondent-dominant reciprocal violence; partner-dominant reciprocal violence;

common-couple reciprocal violence; and no IPV (the referent). We defined "respondent-only violence" as any instance in which the respondent was the sole perpetrator of violence in a relationship, while "partner-only violence" was coded as the reverse. We defined "reciprocal violence" as instances when both the respondent and their partner engaged in IPV during the past year. Within this subset of bidirectional violent acts, "respondent-dominant reciprocal violence" was coded when the respondent injured the partner, or when the frequency or severity of respondent-perpetrated violence was greater than that of partner-perpetrated violence. "Partner-dominant reciprocal violence" was defined as the reverse, and "common-couple reciprocal violence" was coded when reciprocal relationship violence was perpetrated at the same level of severity and frequency by both partners.

Finally, we developed an alternative six-category measure of IPV perpetration using respondent's gender: female-only violence; male-only violence; female-dominant reciprocal violence; male-dominant-reciprocal violence; common-couple violence; and no IPV. The definition of this measure parallels that of the first IPV perpetration variable. Specifically, female-only (male-only) violence marked instances when the sole perpetrator of violence in a relationship was female (male); the common-couple and no-IPV categories were defined as before. Although this was not our preferred measure of IPV perpetration, we used it to motivate and justify our decision to focus our latent class analyses on the partner/respondent dimension of IPV.

Methods

We conducted a latent class analysis (LCA) to identify violence typologies within our sample of young adult dating relationships. LCA is a statistical technique that uses the response patterns across a set of observed categorical variables to identify unobservable subgroups in a population. Because data sparseness can affect the convergence of latent class models, we collapsed the response categories for the six Add Health violence questions (described above) into three frequency groups: zero acts of violence, one act of violence, and two or more acts of violence. Latent class analyses were conducted on the full sample of male and female respondents using the LCA Stata Plugin (Lanza et al. 2014).

We selected the appropriate number of classes by comparing goodness-of-fit indices (the Akaike and the consistent Akaike information criterion, as well as the Bayesian and the sample-size adjusted Bayesian information criterion) for one- to six-class models. For each class number, model convergence and potential problems with multiple modes were assessed by re-estimating the model using different random starting values. Following the lead of Lanza and Rhoades (2014), only models that produced a single maximum likelihood solution in at least eight of ten runs were considered to have converged; models that failed this convergence test were not assessed for model fit. Once we finalized class size, we tried to test for measurement invariance by including respondent's gender as a grouping variable in the final model; however, due to sample size limitations, this expanded model failed to converge and results from measurement invariance tests were therefore inconclusive.

We then assigned relationships to the class for which they were predicted to have the highest membership probability. Following this partition of the sample, descriptive analyses were conducted to examine patterns in average contraceptive use and relationship characteristics across IPV latent classes. In random-effects logistic regression models, we examined associations between IPV classes and condom use, controlling for an array of individual and relationship characteristics. In an auxiliary set of analyses, we expanded the regression model to include interactions between gender and IPV subgroups; however, we failed to find significant interaction effects and therefore did not report these results in the paper. All regressions were run in Stata 13 and adjusted to account for survey weights and clustering.

Preliminary Results

Descriptive Analyses

More than one-half (58%) of the sample reported using condoms at their most recent sex with the reported partner (Table 1). The majority of respondents (82%) reported no IPV with their partner in the last year; however, 21 percent of female-respondent relationships and 15 percent of male-respondent relationships included some type of violence. Slapping/hitting/kicking tended to be the most severe form of violence reported by couples (8%), followed by threatening (6%) and injury (4%). With respect to IPV frequency, about 15 percent of all relationships in the sample reported experiencing one to ten violent acts in the prior year, while about three percent experienced more than 10 instances of violence. For the IPV perpetrator scale, respondents and partners were equally likely to be the sole perpetrators of violence in a relationship (5%). Among female respondents, however, the incidence of respondent-only violence was more than two times greater than that of partner-only violence (8% as compared to 4%), while the reverse was true for male respondents. Approximately 8 percent of relationships reported reciprocal violence, meaning that both the respondent and their partner committed violence against one another. Respondent-dominant reciprocal violence was the least common form of bidirectional violence (2% for the full sample), while common-couple reciprocal violence tended to be the most common type.

Table 1 also provides detail on individual and relationship characteristics. The sample was evenly split by gender, and the average respondent age was 21.6 years. The majority of respondents were white; 16 percent were black, 10 percent were Hispanic, and 3% were Asian. Many lived alone or with parents (44% and 45%, respectively). A little less than two-thirds had completed some college (62%), and females had higher educational attainment than males. Respondents' average age at first sex was 16.5, and their average number of lifetime sex partners was 6.6, with males reporting more partners than females. In six out of ten relationships, respondents reported knowing their partner for less than six months before having sex. Nearly all (88%) relationships lasted longer than three months, perhaps because the questions about violence were only asked about recent or "important" relationships that tended to be longer term. However, 31 percent indicated that the relationship in question was casual. Males reported shorter periods of time before sex and shorter relationship durations than did females; they were also more likely to classify their relationships as causal. About three-quarters of respondents reported a partner age difference; females tended to have older partners, while males tended to have younger partners.

IPV and Condom Use

To motivate and guide the construction of our latent class violence typologies, we first conducted bivariate analyses of condom use and selected IPV measures (Table 2). Both severity and frequency of relationship violence were associated with lower rates of condom-use. While threatening was not linked to reduced condom-use, couples that reported slapping/hitting/kicking or injury we 12 percent and 26 percent (respectively) less likely to report using condoms at last sex than the non-violence group. Similarly, relative to non-violent relationships, lower rates of condom-use were observed for couples reporting three or more acts of violence a year, but not for relationships reporting less than three acts of violence in the prior year. In terms of IPV perpetration, partner-only violence and partner-dominant-reciprocal violence were the only two IPV types to report significantly lower condom-use rates than non-violent couples .

The results for IPV severity and frequency remained relatively stable between male- and female-respondent samples, although the associations between condom-use and these IPV measures tended to be stronger in male responses. Similarly, for both female and male respondents, partner-only violence

and partner-dominant-reciprocal violence were the only IPV perpetrator types to be linked to reduced condom-use rates. In contrast, while male-dominant-reciprocal violence was linked to significantly lower rates of condom use in the sample of female-respondents, female-only and female-dominant-reciprocal violence were the only violence types to be marginally associated with reduced condom-use in the male-respondent sample. Taken together, the IPV-perpetrator and gendered-IPV results suggest that the respondent/partner dimension of IPV matters more for condom-use than the male/female dimension. As a result, we decided to focus our latent class analyses on the partner/respondent divide in IPV, rather than differences in male-dominant and female-dominant relationship violence.

IPV Latent Classes

Latent class model fit improved as the number of classes increased from one to four, leveled off between 4- and 5-class models, and was incomputable for six classes due to problems with model convergence. Our decision to select the 5-class model over the 4-class model was based on the interpretability of model classes, as well as assessments of the models' goodness-of-fit statistics.

Table 3 summarizes the gender composition, incidence of condom-use at last sex, and violence characteristics of each of following five IPV classes:

- *Non-violent*: Encompassing nearly 91 percent of all relationships in our sample, the non-violent class was characterized by low levels IPV. Nine out of ten non-violent relationships reported zero acts of violence in the prior year, and those that did report IPV tended to experience relatively low-severity/low-frequency violence. Approximately half of non-violent relationships were reported by male respondents (51%) and condom use was most prevalent in this class.

- *Respondent-dominant*: The respondent-dominant violence class was characterized by high-levels of respondent-perpetrated violence. In roughly four in ten (42%) of these relationships, respondents were the sole perpetrator of IPV, while another 37 percent involved respondent-dominant reciprocal violence. No relationships involved partner-only violence, and only 6 percent reported partner-dominant reciprocal violence. In terms of severity, violence in the respondent-dominant class tended to come in the form of slapping, hitting, or kicking (78% of relationships). The distribution of IPV frequency was also relatively concentrated for this class, with three out of four couples reporting between 3 and 10 acts of violence in the prior year. As a point of comparison, this range of IPV frequencies was reported in 37 percent of relationships that reported any form of violence in the prior year. The respondent-dominant relationship class also had a striking gender imbalance: only 11 percent of these relationships were reported by male respondents. Levels of condom use, however, were comparable to those observed for the non-violent class.

- *Partner-dominant*: Latent class analyses uncovered two distinct partner-dominant classes that were distinguishable by differences in IPV severity and frequency. Both classes were characterized by comparable levels of partner-only violence (43% and 48%) and relatively low-levels of respondent-dominant reciprocal violence (12% and 4%). However, less than one-fifth (18%) of the partner-dominant/lower-intensity class reported injuries in the past year, as compared to nearly half (49%) of the higher-intensity subgroup. Furthermore, the percent of relationships reporting more than 10 acts of violence was 18 times greater in the higher-intensity class than in the lower-intensity group (46% versus 3%). There was a greater representation of male respondents in the higher-intensity class (65%) than in the lower-

intensity class (57%), but condom-use levels for these two subgroups were nearly identical and were noticeably lower than those observed in the non-violent and respondent-dominant classes.

- *Reciprocal:* The reciprocal class combined high-frequency and high-severity IPV with high levels of reciprocal (bidirectional) violence. Nearly three-quarters (73%) of this group reported an injury in the prior year, and 87 percent reported more than ten acts of violence. All relationships in the bidirectional class reported reciprocal violence, with 17 percent and 44 percent reporting respondent-dominant and partner-dominant reciprocal violence, respectively. As with the respondent-dominant class, the bidirectional subgroup was skewed towards female-reporting, as seven-tenths of its relationships were reported by a female respondent. In contrast with respondent-dominant class, however, the bidirectional group reported the lowest incidence of condom-use (43%).

Multivariate Analyses

In general, relationship violence was negatively associated with condom use (Table 4). In Model 1, members of the partner-dominant/higher intensity and reciprocal classes reported significantly lower condom-use odds than non-violent couples (ORs: 0.50 and 0.42). Similarly low likelihoods of condom-use were estimated for the partner-dominant/lower-intensity class (OR: 0.53), although this correlation was only marginally significant (p=.055). No meaningful difference in condom-use was found between the respondent-dominant and non-violent classes.

Controlling for individual and relationship characteristics strengthened and reaffirmed the above findings. In Model 2, all IPV classes except for the respondent-dominant subgroup showed significantly lower odds of condom-use compared to non-violent couples. The introduction of controls reduced the estimated odds of condom-use among partner-dominant/lower-intensity and partner-dominant/higher-intensity couples, but had little effect on the odds ratios for respondent-dominant and bidirectional classes. Interestingly, condom-use likelihoods did vary noticeably between partner-dominant and reciprocal classes: compared to the non-violent class, membership in any of these three IPV subgroups reduced condom-use odds by between 55 and 60 percent.

Several individual and relationship characteristics were also linked to condom use. Being black (vs. white), having a high school education (vs. less than a high school education), having an older age of sexual initiation, and knowing a partner for a longer time before initiating sex were linked to increased odds of condom use, whereas having more sexual partners, using a hormonal or long-lasting contraceptive method at most recent sex, and being older were associated with lower odds. Perhaps surprisingly, respondent's gender was found to have a weak and statistically insignificant association with condom use at last sex.

Discussion

Our analyses found that relationship violence is fairly common among young adult dating relationships, with 21% of dating relationships reported by young adult females and 15% of relationships reported by males experiencing some type of violence. In this paper, we found heterogeneity in violence reported in these relationships based on measures of frequency, severity, and perpetrator. We specifically identified five violence typologies, differentiating relationships with respondent-dominant violence, partner-dominant violence (including lower and higher intensity violence), and reciprocal violence from relationships that experienced no or minimal amounts of violence.

Respondent-dominant violence. Notably, the relationship typology characterized by high levels of respondent-dominant violence, was primarily made up of female respondents. This finding is consistent with previous research using survey data, and highlights the fact that surveys tend to be more likely to capture female-dominant violence than administrative data from violence shelters. Although three-quarters of the relationships in this category involved physical violence such as slapping, hitting or kicking, this category of relationships was not associated with couple-level condom use.

Partner-dominant violence. We identified two categories of partner-dominant violence – including lower intensity (with lower frequency and severity) and higher intensity (with higher frequency and severity). For example, almost half of the relationships in the higher intensity partner-dominant violence category involved injury to one partner and 46 percent of involved 10 or more acts of violence (compared with 18 percent and 3 percent, respectively, of lower intensity relationships). Despite the differences in intensity, both categories of partner-dominant violence were associated with similarly reduced likelihood of condom use. In addition, both categories of partner-dominant violence had more men respondents than women, reinforcing other research using survey data that suggests that men may be more willing to report violence perpetrated by their female partner than themselves or that men may be less likely to retaliate against female-initiated violence (Whitaker, Haileyesus et al. 2007). We conducted some additional analyses to assess whether gendered violence typologies would be more predictive of condom use (for example, comparing male-dominant to female-dominant violence). Interestingly, for both males and females, *partner-dominant violence* was more predictive of reduced condom use than male or female-dominant violence. This finding suggests that individuals who view themselves as a victim of IPV (whether male or female) are less able to negotiate condom use (or more willing to report condom nonuse) reinforcing a power dynamics approach to relationship violence.

Reciprocal violence. Our final category of relationships included those that involved some type of reciprocal violence. This relationship category included the highest severity and frequency of violence across the violence types – with almost three-quarters resulting in injury and 87 percent involving 10 or more acts of violence. This finding is more consistent with findings reported by Whitaker et al, which highlighted higher escalation and more severe violence in reciprocal violent relationship. Our typologies did not identify a lower-frequency, lower escalation category of common couple reciprocal violence that was identified by Johnson's previous work. Women respondents were more likely than men to fit into this category or violence, and it was also linked to reduced condom use.

Gender differences. Overall, there were gender difference in reporting of violence, with females more represented in the respondent-initiated and reciprocal violence categories and males more likely to be in the partner-dominant categories. Researchers have posited that while both men and women tend to under-report IPV, men may be especially less willing to report perpetrating violence(Dutton and Nicholls 2005; Chan 2011), because of social stigma and shame associated with IPV, male perceptions that female-perpetrator violence is not a crime, and male self-blame for violence that is perpetrated against them(Dutton and Nicholls 2005; Whitaker, Haileyesus et al. 2007; Herrera, Wiersma et al. 2008; Chan 2011). Additionally, it is possible that non-clinical surveys like Add Health may capture less severe IPV than clinic-based samples that find higher levels of male perpetration and female victimization (Johnson 1995).

Both partner-dominant and reciprocal violence categories were linked to reduced condom use, while respondent-dominant violence was not, highlighting the importance of relationship violence to reproductive health decision-making and the prevention of STIs in dating relationships. We did not find significant gender interactions in the associations between relationship categories and condom use.

Limitations. Because of sample size issues, we were not able to include gender as a grouping variable in the identification of relationship typologies. Future studies with larger samples of violent relationships may be able to identify separate typologies for males and females. In addition, we rely on respondent reports of violence that they and their partner initiated, when we would ideally incorporate reporting from both couples. Analyses of the Add Health relationship sample could provide more information on reports from both partners.

Conclusion. Our analyses indicate that relationship violence is one component of relationship context that has an important association with condom use behaviors in young adulthood, an age when rates of STIs and unintended pregnancy are high. These findings, combined with the substantial percentage of young adult dating relationships in our sample that involved some type of violence, highlight the importance of incorporating violence prevention into STI-prevention and pregnancy-prevention program efforts. However, despite extensive evaluations of pregnancy prevention curricula for school-age teens,(Kirby 2007) very few programs have been evaluated among young adult populations,(Kirby 2008) highlighting the importance of identifying ways to reach young adults with HIV-prevention, pregnancy-prevention and violence prevention efforts.

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Table 1. Weighted Frequencies and Means of Condom Use, Intimate Partner Violence Measures, and Individual and Relationship Characteristics, among Young Adult Dating Relationships

	Total (N=8,599)	**Females (N=4,641)**	**Males (N=3,958)**
Gender			
Male	50%	0%	100%
Condom use			
Used condoms at last sex	58%	56%	59%
Severity of Intimate Partner Violence			
No violence with partner in past year	82%	79%	85%
Threatened, threw something at, pushed or shoved	6%	8%	5%
Slapped, hit, or kicked	8%	9%	7%
Injured	4%	4%	3%
Frequency of Intimate Partner Violence			
0 acts of violence in past year	82%	79%	85%
1 act of violence	5%	6%	4%
2 acts of violence	3%	4%	3%
3 to 10 acts of violence	7%	8%	5%
More than 10 acts of violence	3%	4%	3%
Perpetrator of Intimate Partner Violence			
No violence with partner in past year	82%	79%	85%
Respondent-only violence	5%	8%	2%
Partner-only violence	5%	4%	7%
Reciprocal violence			
Respondent-dominant	2%	3%	1%
Partner-dominant	3%	3%	2%
Common-couple	3%	4%	3%
Individual Characteristics			
Age	21.6	21.5	21.7
Race			
White	71%	70%	72%
Black	16%	18%	13%
Hispanic	10%	9%	11%
Asian	3%	3%	4%
Living situation			
Living in own place	44%	47%	42%
Living with parents	45%	42%	47%
Living with others	11%	11%	11%
Educational attainment			
Less than high school	10%	9%	11%
High school	28%	25%	31%
At least some college	62%	67%	58%
Age at first sex	16.5	16.4	16.5
Number of partners	6.6	6.1	7.1
Relationship Characteristics			
Length of time knew partner before sex			
Less than 1 month	30%	23%	37%
1 month – 5 months	30%	34%	27%
6 months or more	40%	44%	36%
Age of partner			
Same age	23%	21%	25%
Partner older	45%	67%	24%
Partner younger	31%	12%	51%
Hormonal or long-lasting contraceptive use	37%	42%	33%
Current relationship	34%	36%	32%
Casual relationship	31%	28%	34%

Relationship duration (< 3 months)	12%	8%	15%
Violence in a prior relationship	3%	4%	2%

Table 2. Condom use by violence measures and gender of respondents

	Full Sample		Females		Males	
Severity of Intimate Partner Violence						
No violence with partner in past year	59%		57%		60%	
Threatened, threw something at, pushed or shoved	60%		56%		65%	
Slapped, hit, or kicked	52%	*	54%		50%	*
Injured	43%	**	44%	*	42%	**
Frequency of Intimate Partner Violence						
0 acts of violence in past year	59%		57%		60%	
1 act of violence	58%		54%		63%	
2 acts of violence	58%		60%		55%	
3 to 10 acts of violence	49%	**	51%		46%	**
More than 10 acts of violence	49%	*	48%	+	50%	+
Perpetrator of Intimate Partner Violence						
No violence with partner in past year	59%		57%		60%	
Respondent-only violence	58%		57%		63%	
Partner-only violence	52%	+	51%		52%	+
Reciprocal violence			52%		40%	
Respondent-dominant	50%					
Partner-dominant	45%	**	42%	**	48%	+
Common-couple	55%		55%		54%	
Gendered Intimate Partner Violence						
No violence with partner in past year	59%		57%		60%	
Female-only violence	55%		57%		52%	+
Male-only violence	56%	+	51%		63%	
Reciprocal violence						
Female-dominant	50%	**	52%		48%	+
Male-dominant	42%		42%	**	40%	
Common-couple	55%		55%		54%	

Different from no violence: + <0.10; * p<0.05; ** p<0.01

Table 3. Distribution of Young Adult Relationships, by Selected Relationship Characteristics and IPV measures, According to Latent Violence Class

	Non-violent	Respondent-dominant	Partner-dominant/ lower-intensity	Partner-dominant/ higher-intensity	Reciprocal	Full Sample	Any Violence Sample
Gender							
Male	51%	11%	57%	65%	30%	50%	40%
Condom use							
Used condoms at last sex	58%	58%	47%	46%	43%	58%	53%
Severity of Intimate Partner Violence							
No violence with partner in past year	90%	0%	0%	0%	0%	82%	0%
Threatened, threw something at, pushed or shoved	7%	9%	0%	0%	0%	6%	35%
Slapped, hit, or kicked	3%	78%	82%	51%	27%	8%	46%
Injured	0%	13%	18%	49%	73%	4%	20%
Frequency of Intimate Partner Violence							
0 acts of violence in past year	90%	0%	0%	0%	0%	82%	0%
1 act of violence	5%	0%	0%	0%	0%	5%	27%
2 acts of violence	3%	12%	26%	0%	0%	3%	17%
3 to 10 acts of violence	2%	75%	71%	54%	13%	7%	37%
More than 10 acts of violence	0%	13%	3%	46%	87%	3%	19%
Perpetrator of Intimate Partner Violence							
No violence with partner in past year	90%	0%	0%	0%	0%	82%	0%
Respondent-only violence	5%	42%	0%	0%	0%	5%	29%
Partner-only violence	3%	0%	43%	48%	0%	5%	28%
Reciprocal violence							
Respondent-dominant	0%	37%	12%	4%	17%	2%	10%
Partner-dominant	0%	6%	18%	38%	44%	3%	14%
Common-couple	2%	14%	28%	10%	39%	3%	19%
Sample Size	7,792	263	174	197	173	8,599	1,604

Table 4. Random Effects Odds Ratios from Logistic Regression Models Predicting Relationship-Level Condom Use by Intimate Partner Violence, among Females and Males Ages 18-25

	Model 1		Model 2	
Intimate Partner Violence Latent Classes				
Non-violent (ref)	(1.00)		(1.00)	
Partner-dominant/ lower-intensity	0.53	+	0.45	*
Partner-dominant/higher-intensity	0.50	*	0.40	**
Respondent-dominant	0.92		0.92	
Bidirectional	0.42	**	0.43	*
Individual Characteristics				
Male			1.12	
Age			0.92	*
Race				
White (ref)			(1.00)	
Black			2.60	**
Hispanic			1.33	
Asian			1.36	
Living situation				
Living in own place (ref)			(1.00)	
Living with parents			0.98	
Living with others			0.97	
Educational attainment				
Less than high school (ref)			(1.00)	
High school			1.44	+
At least some college			1.28	
Age at first sex			1.10	**
Number of partners			0.97	**
Relationship Characteristics				
Length of time knew partner before sex				
Less than 1 month (ref)			(1.00)	
1 month – 5 months			1.27	+
6 months or more			1.42	**
Age of partner				
Same age (ref)			(1.00)	
Partner older			0.79	+
Partner younger			1.03	
Hormonal or long-lasting contraceptive use			0.60	**
Casual relationship			1.03	
Relationship duration (< 3 months)			0.91	
Violence in a prior relationship			0.90	

Note: We also controlled for whether the relationship was current at the time of the survey. This variable reduced the odds of condom use for the full sample (p<.01).

+ <0.10; * p<0.05; ** p<0.01