Dating Violence and Associated Sexual Risk and Pregnancy Among Adolescent Girls in the United States

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ABSTRACT. *Objectives.* **To assess the annual prevalence of physical violence from dating partners among a representative sample of sexually experienced adolescent girls attending US public and private high schools, as well as sexual risk behaviors and pregnancy among this population.**

Design, Setting, Participants, and Measures. **Female students (9th through 12th grade) ($N = 6864$) participating in the 2001 National Youth Risk Behavior Survey completed measures of physical dating violence during the previous year, as well as assessments of health risk behaviors. Annual rates of physical dating violence were estimated for sexually experienced ($n = 3085$) and inexperienced girls. Multiple logistic regression models were constructed to assess whether physical dating violence in the previous year was associated with sexual health risks and pregnancy, after controlling for effects of potentially confounding demographic features and risk behaviors.**

Results. **Slightly less than 1 of 5 sexually experienced US adolescent girls (17.7%) reported being intentionally physically hurt by a date in the previous year, and ~1 of 25 girls (3.7%) who reported no sexual experience reported such violence. Dating violence among sexually experienced adolescent girls was related to increased risks for both sexual risk behaviors (eg, recent multiple sexual partners: odds ratio: 2.0; 95% confidence interval: 1.3–3.1) and pregnancy (odds ratio: 1.8; 95% confidence interval: 1.3–2.4).**

Conclusions. **Dating violence is prevalent among US adolescent girls, especially those reporting having had sexual intercourse. Adolescent girls intentionally hurt by a date in the previous year are more likely to experience sexual health risks, including those increasing vulnerability to human immunodeficiency virus infection and other sexually transmitted infections, and to have been pregnant. Dating violence should be integrated into sexual health and pregnancy prevention programs, and greater efforts to identify girls experiencing dating violence are needed among those providing care related to adolescent sexual and reproductive health.** *Pediatrics* **2004;114:e220–e225. URL: http://www.pediatrics.org/cgi/content/full/114/2/e220;** ***dating violence, sexual risk, adolescents.***

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ABBREVIATIONS. YRBS, Youth Risk Behavior Survey; OR, odds ratio; CI, confidence interval; HIV, human immunodeficiency virus; STI, sexually transmitted infection; IPV, intimate partner violence.

One-half of high school students in the United States have engaged in sexual intercourse,[1] and ~900 000 US adolescents become pregnant each year.[2] Furthermore, sexual risks (ie, behaviors conferring vulnerability to sexually transmitted infections [STIs]) and pregnancy rates are disproportionately higher among US adolescents, compared with adolescents from other industrialized nations, despite similar levels of sexual activity and ages at the first sexual experience.[3,4] Approximately 1 of 16 adolescent girls becomes pregnant,[2] and ~8 million cases of non–human immunodeficiency virus (HIV)-related STIs are diagnosed each year among persons 13 to 24 years of age in the United States.[5] More than 31 000 persons 13 to 24 years of age in the United States are reported to have acquired immunodeficiency syndrome.[6] Among adolescents, new HIV infections are more common among girls than boys (61% vs 39%),[6] and adolescent girls are far more likely to be infected through heterosexual intercourse than are boys (45% vs 9%).[6]

In relation to these trends, recent research with women indicated that sexual risks occur primarily within the context of heterosexual relationships and that factors related to power dynamics and violence in relationships have effects on these risks.[7,8] Although little research has focused on adolescents, recent analyses of state-level representative data indicated that 1 of 5 girls report a history of dating violence and noted a relationship between dating violence and girls' sexual risks and pregnancy.[9] Other studies found similar results regarding the associations of both severe dating violence and sexual abuse history with pregnancy and sexual risks among adolescents.[10–12] Furthermore, adolescent girls who had experienced dating violence were found to be less likely to use condoms consistently and to be more likely to fear the perceived consequences of negotiating condom use,[13] indicating a possible active or coercive role of male dating partners in inhibiting safer sex practices. The adult literature also demonstrates effects of intimate partner violence (IPV) on reproductive health, including birth control sabotage, unintended and unwanted pregnancy, and sexually transmitted diseases.[14–19]

IPV is a gender-specific problem; the rate of IPV

against female intimate partners is 3 to 6 times the rate of IPV against male partners in national representative adult surveys.[20,21] Injuries resulting from such violence are significantly more common among female subjects in both adolescent[22] and adult[20] populations, and ~10% of intentional injuries to adolescent girls are the result of dating violence.[23] Therefore, the present analyses focus on female victimization related to dating violence and related sexual health and pregnancy risks.

Previous studies examining the relationships among adolescent dating violence, pregnancy, and sexual risks were limited, in that 1) data were collected from a single state, 2) participants included only public school students, and 3) broader measures of dating violence (ie, not limited to severe physical violence) assessed only lifetime prevalence, making it difficult to assess the meaning of such reports in relation to recent sexual risk behavior, eg, experiences of dating violence that occurred several years previously and experiences of such violence in recent months were grouped in models predicting recent sexual risks and pregnancy. A recent national study of dating violence confirmed previous work, finding that dating violence was more prevalent among girls who had experienced sexual intercourse; however, because sampling for analyses of relationships of sexual risk behaviors (eg, use of a condom during the previous sexual experience) to dating violence was not limited to those who reported ever having had sexual intercourse, findings failed to assess whether girls who have the opportunity to enact sexual risk behaviors do so, in relation to dating violence.[24] The present study used a 12-month prevalence assessment of physical dating violence and assessments of recent sexual risk behaviors among a large, representative, national sample of adolescent girls, attending public or private high schools, who reported having had sexual intercourse. These analyses provide enhanced generalizability and precision regarding relationships of physical dating violence victimization to sexual risks and pregnancy.

METHODS

Survey Design

The Youth Risk Behavior Survey (YRBS) is conducted every 2 years, to track the incidence and prevalence of leading causes of morbidity and death among US high school students. The YRBS is a self-reporting, written instrument completed in English. The 2001 National YRBS used a 3-stage cluster sample design to produce a national sample representative of students in grades 9 to 12 in both public and private schools in the 50 states and the District of Columbia.[1] Adolescents in 38 states and 19 large cities participated in the 2001 National YRBS. The school response rate was 75% and the student response rate was 83%, yielding an overall response rate of 63%. Additional details of the sampling design, survey implementation, response rates, and weighting have been published elsewhere.[1]

Sample Demographic Features

The 2001 National YRBS survey included 6864 female participants; 42.9% ($N = 3085$) reported ever having had sexual intercourse (Table 1). Female participants were fairly evenly distributed across age groups. The largest racial/ethnic group was white (68.0%), with smaller percentages of Hispanic (11.9%), black (13.0%), Asian/Pacific Islander (3.4%), and other racial/ethnic group (3.6%) participants. The sample represented adolescents from all geographic regions, with the largest numbers from the southern region (49.1%) and the smallest numbers from the northeastern United States (8.7%). A majority of participants resided in suburban (57.1%) or urban (30.1%) communities.

Measures

All variables were assessed via single items. Because of the nature of the present analyses, variables were dichotomized, with the exceptions of age, race/ethnicity, geographic region, and metropolitan status. Physical dating violence against adolescent girls was assessed by inquiring as follows: "during the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?" Data indicating the construct validity of this assessment are limited to a high percentage of those reporting dating violence also indicating being in a physical fight during the same 12-month period (53.0%), in separate YRBS items. The reliability (ie, replicability) of this dating violence assessment is indicated by the similar prevalence rates found for both years for which data were collected, ie, 9.3% in 1999[25] and 9.8% in 2001.[1] Single items assessing sexual risks, pregnancy, substance use, unhealthy weight control, and suicidality were also included in the analyses. The reliability of these measures was demonstrated previously.[26]

Data Analyses

The relationships between dating violence and both demographic variables and having ever had sexual intercourse were assessed with χ^2 tests of association. Analyses examining the associations between dating violence and sexual risk behaviors and pregnancy were limited to participants who reported ever having had sexual intercourse. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated to examine the crude associations between dating violence and sexual risks and pregnancy, with adjustment only for related demographic characteristics. To better understand these relationships, potential confounders (health risks and demographic features found to be associated with both dating violence and sexual risks or pregnancy in a previous study[9]) were entered into multiple logistic regression equations assessing dating violence as a predictor of sexual risk behaviors and pregnancy. Health risk behaviors considered for potential confounding included binge drinking (consuming ≥5 consecutive alcoholic drinks in the previous 30 days), heavy smoking (smoking ≥11 cigarettes per day in the previous 30 days), unhealthy weight control (using diet pills, vomiting, or laxatives to lose weight in the previous 30 days), and suicidality (seriously attempting suicide in the previous 12 months). In accordance with procedures recommended by Rothman and Greenland,[27] variables that either altered point estimates by >10% or were significant predictors at $\alpha = .20$ were included in the final models. Cases involving missing data relevant to analyses were eliminated from those analyses. Because only 0.2% of participants failed to respond to the dating violence survey item, no sensitivity analysis was conducted. SUDAAN software[28] was used to conduct all analyses, to account for the complex sampling design and weighting of the data. All results presented are based on analyses of weighted data.

RESULTS

Descriptive Statistics for Dating Violence and Associations Between Dating Violence and Demographic Features and Between Dating Violence and Sexual Experience

Approximately 1 of 10 female high school students (9.8%) in the United States reported experiencing physical violence from dating partners in the previous 12 months;[1] this number increased to almost 1 of 5 (17.7%) for girls who reported ever having had sexual intercourse ($P < .001$; Table 1). Significant differences among age groups were also revealed with χ^2 analyses, with younger female students appearing to be at reduced risk for dating violence during the previous 12 months ($P < .001$). No significant differences were found for the 12-month prevalence of dating violence among either racial/ethnic

TABLE 1. US Adolescent Girls Reporting Physical Dating Violence During the Past 12 Months, According to Demographic Variables and Sexual Experience (YRBS, 2001)

	N	% (95% CI)	Physical Dating Violence, Past 12 mo, % (95% CI)	χ^2 for Dating Violence
Total	6864		9.8 (8.7–10.9)	
Age, y				$P < .001$
≤14	711	12.7 (11.1–14.3)	9.4 (6.6–12.1)	
15	1631	26.6 (24.7–28.5)	8.0 (6.3–9.8)	
16	1828	25.8 (24.2–27.3)	11.6 (9.7–13.5)	
17	1739	22.7 (21.2–24.2)	8.8 (7.2–10.4)	
≥18	955	12.2 (10.8–13.7)	12.2 (9.7–14.7)	
Race				$P = .24$
White	3167	68.0 (61.2–74.9)	9.4 (8.3–10.6)	
Black	1366	13.0 (8.6–17.5)	11.7 (9.5–13.9)	
Hispanic	1671	11.9 (7.1–16.8)	10.7 (8.9–12.5)	
Asian/Pacific Islander	197	3.4 (1.9–4.8)	7.5 (0.8–14.1)	
Other/multiple	309	3.6 (2.7–4.6)	8.1 (4.3–11.9)	
Geographic region				$P = .06$
Northeast	497	8.7 (0.3–17.1)	7.3 (4.7–9.9)	
Midwest	1037	19.5 (5.8–33.2)	9.3 (7.4–11.3)	
South	3145	49.1 (32.8–65.4)	10.9 (9.5–12.3)	
West	2185	22.7 (10.5–34.8)	8.8 (7.3–10.4)	
Metropolitan status				$P = .02$
Urban	2507	30.1 (20.4–39.9)	11.4 (9.7–13.0)	
Suburban	3659	57.1 (46.0–68.3)	8.7 (7.6–9.9)	
Rural	648	12.3 (5.5–19.2)	11.4 (8.5–14.3)	
Sexual experience				$P < .001$
Had sexual intercourse	3085	42.9 (39.9–45.9)	17.7 (15.9–19.6)	
No sexual intercourse	3621	57.1 (54.1–60.1)	3.8 (2.8–4.8)	

groups or geographic regions. However, with respect to metropolitan status, adolescents from both rural and urban areas reported higher rates of dating violence victimization, compared with adolescents from suburban communities ($P = .02$).

Bivariate and Multivariate Relationships Between Dating Violence and Sexual Health Risks and Pregnancy

Bivariate logistic regression analyses adjusted for related demographic features indicated that experience of dating violence was associated with all assessed sexual risk behaviors (first intercourse before the age of 15 years, not using a condom during most recent intercourse, alcohol or drug use before most recent intercourse, or ≥3 sexual partners in the previous 3 months) and pregnancy among US adolescent girls (Table 2). Multiple logistic regression equations constructed to include potential confounders (demographic features and other health risks related to both dating violence and predicted outcomes) of bivariate relationships of dating violence and adolescent sexual risk behaviors yielded similar results. Adolescent girls who reported experiencing dating violence in the previous year were 50% more likely than female peers to report both having first sexual intercourse before the age of 15 years (OR: 1.5; 95% CI: 1.1–2.2) and using substances before most recent intercourse (OR: 1.5; 95% CI: 1.6–2.8). Dating violence victimization was also related to an increased risk among adolescent girls of not using a condom during most recent intercourse (OR: 1.3; 95% CI: 1.0–1.7). Girls who reported violence from dating partners in the previous year were also approximately twice as likely as female peers to report having ≥3 sexual partners in the previous 3 months (OR: 2.0; 95% CI: 1.3–3.1) and to have ever been pregnant (OR: 1.8; 95% CI: 1.3–2.4).

DISCUSSION

Adolescent girls in the United States reported experiencing high rates of physical violence from dating partners. Approximately 1 of 10 adolescent girls (9.8%) reported being intentionally physically hurt by a dating partner during the previous 12 months.[1] The rate of previous-year dating violence victimiza-

TABLE 2. ORs for Relationships Between Physical Dating Violence in the Past 12 Months and Sexual Health Risk Behaviors and Pregnancy Among US Adolescent Girls Reporting Sexual Intercourse, Adjusted for Age, Race, Geographic Region, and Metropolitan Status, and Demographic Features and Potentially Confounding Health Risk Behaviors (YRBS, 2001) ($N = 6864$)

Sexual Health Risk	Physical Dating Violence, Past 12 mo, OR (95% CI)*	Physical Dating Violence, Past 12 mo, OR_{adj} (95% CI)†
First intercourse before age 15 y	2.0 (1.5–2.7)	1.5 (1.1–2.2)
Substance use just before last intercourse	2.1 (1.6–2.8)	1.5 (1.1–2.0)
No condom used at last intercourse	1.4 (1.1–1.8)	1.3 (1.0–1.7)
≥3 sex partners (90 d)	3.8 (2.5–5.8)	2.0 (1.3–3.1)
Pregnancy (ever)	2.4 (1.8–3.2)	1.8 (1.3–2.4)

* Adjusted for related demographic features (age, race, geographic region, and metropolitan status).
† Adjusted for related demographic features (age, race, geographic region, and metropolitan status) and potentially confounding risk behaviors (heavy smoking, substance use, unhealthy weight control, suicidality, and other sexual risk behaviors).

tion was significantly greater, almost 1 of 5 (17.7%), among US girls who reported having ever had sexual intercourse. This difference is likely attributable to the presumed higher prevalence of dating behavior among girls who indicate sexual experience compared with their sexually inexperienced peers. Although consistent with previous lifetime prevalence estimates for adolescent dating violence,[9] these rates are sharply higher than those derived from a recent, nationally representative survey,[20] which indicated a 1.5% 12-month prevalence of IPV among adult US women; this supports the idea of regarding adolescence as a period of increased vulnerability to violence from partners. This is consistent with findings indicating that younger age places female subjects at relatively higher risk for IPV.[20,21]

Younger US adolescent girls were found to be at lower risk for experiences of dating violence. This is consistent with previous studies[9,29] and may be attributable to reduced opportunity for such experiences among younger girls, because of their relatively lower rates of dating and/or sexual activity. No significant differences in rates of dating violence victimization among racial/ethnic groups or geographic regions were found. This assessment might have been hindered by the grouping of diverse Hispanic and Asian/Pacific Islander communities and by the relatively small number of Asian/Pacific Islander participants. However, girls from both urban and rural communities were found to suffer higher rates of violence from dating partners than did girls living in suburban communities. This is partially consistent with a previous study of state-level data indicating that rural adolescents are at greatest risk for dating violence.[30] Possible explanations for this finding include the relative lack of resources related to combating IPV in rural communities, the relatively higher levels of social isolation in rural areas, the relatively higher levels of all forms of violence in urban communities, and the higher levels of poverty, a consistent risk marker for adult IPV,[19,31] common to both urban and rural communities.

US adolescent girls who reported being intentionally hurt by a date in the previous 12 months were found to be at significantly elevated risk for a broad range of sexual health concerns and for pregnancy in the present analyses, and this heightened risk remained evident after controlling for the effects of potentially confounding risk behaviors and related demographic features. Similar to state-level studies of dating violence[9,32] and sexual abuse not specific to dating partners,[11,33–36] US adolescent girls who reported experiencing physical dating violence in the previous year were more likely than their female peers to report having experienced early first intercourse. What cannot be concluded from these findings is the extent to which earlier sexual experiences were abusive or coercive in nature, thus accounting for the strong association with sexual and physical dating violence.[9]

Adolescent girls who reported dating violence in the previous year were also twice as likely as their female peers to report high levels of recent multiple-partnering. Similar to findings for early intercourse, it is not possible to determine whether multiple-partnering practices put these adolescents at greater risk because of increased exposure to potentially abusive dating partners, whether dating violence affects adolescent girls such that they are more likely to seek multiple sexual partners, or whether external factors that were not examined confer increased risk for both concerns.

Rates of recent condom use, which is the major means of protection from HIV infection and other STIs, were significantly lower among girls who had experienced dating violence in the previous year. This finding is consistent with a study of African American adolescent girls that demonstrated that girls who experienced dating violence were less likely to use condoms and more likely to fear negotiating condom use with male partners.[13] Another form of recent sexual risk, ie, using alcohol or drugs before the previous intercourse, was significantly more likely to be reported by girls who had experienced dating violence in the present study. Although it is not possible to establish a directional relationship or the mechanism involved in this relationship, these data make more proximal these previously demonstrated associations,[9] because of the time period covered by these assessments, ie, unsafe sexual practices occurring within the same 12-month period as experiences of dating violence are documented here, compared with previous work[9] that found relationships between recent unsafe sex and ever experiencing dating violence. Overall, the findings indicate that, regardless of directionality or mechanism, adolescent girls who experience dating violence are at significantly increased risk for multiple high-risk behaviors related to sex, including having greater numbers of sexual partners, not consistently using condoms, and using substances before sexual intercourse. These behaviors are more prevalent and may lead to increased risks for contracting HIV and other STIs among the large numbers of US adolescent girls who indicated experiences of dating violence in this study.

Additionally, demonstrating the potential consequences of IPV with respect to increased sexual risk for this population, adolescent girls who reported being hurt in the previous year through dating violence were also approximately twice as likely as other US girls to report having been pregnant. This finding is consistent with earlier studies of smaller samples.[9,37] As with previous studies, a major limitation of the present assessment is the inability to determine whether an abusive dating partner was involved in the pregnancy. Furthermore, the mechanism and time course of the relationship between dating violence and pregnancy cannot be established with these data. However, the previously mentioned study of African American girls provides preliminary evidence of the fear of abusive dating partners leading to lower levels of condom use and condom use negotiation,[13] increasing the likelihood that abused girls may become pregnant. Additional study is needed to confirm these findings and assess other factors that are potentially responsible for the co-

occurrence of dating violence and both condom nonuse and pregnancy among adolescents.

There are several important limitations to this study. The reliance on a single item with limited known validity to assess dating violence may be considered less reliable than use of a detailed, multiple-item instrument with known psychometric characteristics. Furthermore, requiring respondents to label the violence as intentional may lead those currently involved with abusive partners to underreport abusive experiences because of their coping by blaming themselves,[38] accepting excuses from the perpetrator, or believing that the behavior was not intended to hurt them. Studies assessing the reliability and validity of the present array of dating violence assessments are necessary to increase confidence in and comparability among resulting estimates. Lack of information on the specific forms or severity of the reported violence and the duration of this abuse also limits the relationships that can be assessed and our interpretation of results. The previous-year dating violence assessment used in these analyses may provide a greater degree of confidence in the potential co-occurrence of dating violence and sexual risk than do lifetime estimates of such violence. However, specific information regarding participants' current relationships with the perpetrators of the reported violence is still lacking. As with previous school-based studies, risk behaviors assessed among high school attendees may be more prevalent among adolescents with poorer school attendance and those who have dropped out of school. Therefore, dating violence and the sexual risk behaviors examined may be underestimated, and the assessed relationships may be biased toward the null. In addition, we were unable to assess the gender of dating partners involved in reported violence. However, in a recent state-level representative study, most sexual partners reported by adolescent girls were male (98.0% reported heterosexual sexual contact; 95.6% reported no same-sex sexual contact).[9] With the assumption of similar trends for the present data, the portion of dating violence perpetrated by female partners is likely to be small. Finally, limited categories for race/ethnicity and the smaller numbers of participating racial/ethnic minority students limit our understanding of how the issues investigated may differ among different racial/ethnic groups.

CONCLUSIONS

The results of this study indicate a strong relationship between sexual risk and pregnancy and the experience of dating violence among US adolescent girls. Greater study, including both longitudinal and large-scale qualitative examinations, is needed to identify the direction of associations between dating violence and sexual health risks, as well as the mechanisms responsible for these relationships.

Scientific study should also be expanded to focus on those most responsible for the perpetration of dating violence. Our present lack of understanding regarding the development of dating violence behavior among young men represents a critical deficit and a barrier to our prevention of both dating violence and the health risks experienced by adolescents affected by this violence.

Although additional research is needed to clarify these findings, the results of this study have significant implications for adolescent prevention programs. Estimates demonstrate a high rate of dating violence against US girls, particularly those who have experienced sexual intercourse. Prevention efforts in this area should be expanded, and support should be provided for the development and implementation of prevention programs and services specific to teen dating violence, particularly in settings where sexual health is addressed. Beyond the incorporation of dating violence issues in adolescent sexual health programs, the high prevalence of dating violence among girls who have had sexual intercourse indicates that medical and other professionals who provide sexual and reproductive health care for adolescent girls are well situated to intervene regarding dating violence. Such individuals should routinely screen adolescents for dating violence and should be aware of appropriate referrals and other means of assistance.[39]

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