

Sexual Victimization Among a National Probability Sample of Adolescent Women

CONTEXT: Forced sexual intercourse is becoming more salient for adolescent women nationwide, but little is known about sexual revictimization and its mediators among adolescents in middle and high school.

METHODS: Data on 7,545 adolescent women who participated in both Wave 1 (April–December 1995) and Wave 2 (1996) of the National Longitudinal Study of Adolescent Health were used in logistic regression analyses to identify predictors of completed forced sexual intercourse, estimate prevalence of sexual revictimization and determine mediators of the relationship between history of forced sex and sexual revictimization.

RESULTS: At Wave 1, 7% of adolescent women reported having been forced into sexual intercourse. Of these, 8% were revictimized in the following year. In multivariate analyses, predictors of sexual victimization by Wave 1 included having been in a romantic relationship in the past 18 months (odds ratio, 2.1), having been exposed to violence in the past year (1.9), alcohol use in the last year (1.7), marijuana use in the last 30 days (1.5) and increasing levels of emotional distress (1.4). Predictors of sexual victimization between waves included having had sex by the first wave (2.3), alcohol use (2.0), recent cocaine use (4.7), rising levels of emotional distress (1.4) and genital touching within romantic relationships (2.7).

CONCLUSIONS: Health care providers, teachers and school counselors can play key roles in identifying adolescent women at high risk for sexual victimization and revictimization by being attuned to adolescents' mental health symptoms, substance use and levels of sexual activity.

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By Ramesh Raghavan, Laura M. Bogart, Marc N. Elliott, Katherine D. Vestal and Mark A. Schuster

Ramesh Raghavan is policy director, The National Center for Child Traumatic Stress, Los Angeles. Laura M. Bogart is behavioral/social scientist, RAND, Santa Monica, CA. Marc N. Elliott is senior statistician; Katherine D. Vestal is research assistant; and Mark A. Schuster is professor and director—all at UCLA/RAND Center for Adolescent Health Promotion, Los Angeles and Santa Monica.

Forced sexual intercourse is a considerable public health problem among young adolescent women in the United States.¹ Although much of our understanding about the prevalence of forced sex comes from studies of older adolescents and young adults attending college,² a small body of literature has examined the prevalence of forced sex in younger females attending middle and high school.³ For example, in the 2003 Youth Risk Behavior Survey (YRBS), conducted by the Centers for Disease Control and Prevention, 12% of females in grades 9–12 reported having had a forced sexual experience in their lifetime; the prevalence ranged from 6% to 14% across participating states.⁴ In the 1987 National Survey of Children, 11% of white females and 6% of black females reported experiencing non-voluntary sexual intercourse before age 18.⁵ The National Women's Study found that the greatest proportion of all reported rapes (32%) occurred between the ages of 11 and 17.⁶ Such statistics have raised awareness of sexual victimization among younger adolescent women and led to the inclusion in Healthy People 2010 of two objectives specifically targeted at preventing sexual victimization.⁷

In general, research on forced sex among adolescents, as well as research on the broader issue of sexual victimization, suggests that unwanted sexual activity is largely a consequence of several individual, interpersonal and familial variables' working in concert to heighten adolescents'

vulnerability. At the individual and interpersonal levels, adolescents who initiate sexual intercourse earlier or have a greater number of sexual partners,⁸ who have physical, mental or emotional disabilities,⁹ or who report use of alcohol or drugs¹⁰ have an elevated risk of sexual victimization. Among adolescent women, forced sex also appears to be associated with substance use at first sex and history of sexually transmitted disease.¹¹ These findings may have a number of explanations. The sexual exposure hypothesis posits that high levels of sexual activity increase the opportunities for victimization.¹² Substance use, especially intoxication, may lead directly to forced sex by reducing individuals' ability to defend themselves against aggression. Furthermore, both sexual activity and substance use may take place in unsafe, clandestine situations that are not supervised by adults, where victimization is more likely. Adolescent women who have mental health problems may be particularly vulnerable to victimization because of impaired judgment and possible comorbid substance abuse.

At the family level, parental substance use and parenting styles can have a large effect on adolescents' risk for sexual victimization.¹³ For example, adolescent women with parents who abuse drugs and alcohol are more likely than others to report having had nonvoluntary sexual intercourse.¹⁴ In addition, those whose parents know their

whereabouts after school and at night have a reduced likelihood of experiencing unwanted sexual contact relative to their counterparts whose whereabouts is unknown.¹⁵ Close parental supervision decreases opportunities for adolescents to be in situations in which forced sex may occur.

Overall, the probability of having a forced sexual experience has been strongly associated with the number of risk factors in an adolescent's background, suggesting that individual and contextual variables work synergistically to increase the likelihood of forced sex. In particular, Moore, Nord and Peterson found that 6% of adolescent females with none of six risk factors (parental heavy drinking; parental drug use; parental smoking as a teenager; having physical, mental or emotional limitations; living in poverty; and living apart from both parents before age 16) reported forced sex, whereas 9% with one, 26% with two and 68% with three or more risk factors did so.¹⁶ Without early intervention to change adolescents' environment, victimization may continue to occur.

Although sexual abuse in childhood and adolescence is a well-established risk factor for subsequent forced sexual experiences,¹⁷ only two studies to our knowledge have examined the effects of forced sex during childhood or early adolescence on revictimization during adolescence. Humphrey and White found that 13% of women from two incoming undergraduate classes of a university reported that they had been forced into sexual intercourse between the age of 14 and the time they entered college, and women with such a history had 14 times other women's odds of being a victim of forced sex in the first year of college.¹⁸ Noll et al. reported that sexually abused adolescents and young adult females (mean age, 11 years) had twice as many subsequent rapes or sexual assaults within a seven-year period as a comparison group without a history of sexual abuse.¹⁹ Neither of these studies, however, used a nationally representative sample or examined sexual revictimization occurring exclusively among younger adolescents in middle and high school.

Our knowledge of forced sex among adolescent women is limited by additional factors. Few studies on this topic have followed young women over time, and little information exists on the social and demographic correlates and longitudinal predictors of sexual victimization among women this age. Furthermore, most studies have used convenience samples,²⁰ which do not provide accurate national estimates. In addition, studies that do not use behaviorally explicit language (e.g., "inserting a penis into your vagina") risk underestimating the true prevalence of forced sexual intercourse. In the National College Women Sexual Victimization study, for example, respondents were asked if they considered a given incident "to be a rape."²¹ For the 86 incidents that the study's authors categorized as a completed rape, 47% of respondents answered yes and 49% answered no; the remainder said they did not know. Similar issues may exist with data from the YRBS, which asks adolescents about having been "physically forced into sexual intercourse when you did not want to." The lack of behav-

iorally explicit language discounts differences between how victims and scholars view forced sexual intercourse, and poses a serious threat to the validity of previous findings.²² Clearly, there is a need for prospective studies based on nationally representative samples of younger adolescents that use behaviorally explicit language to develop prevalence estimates of forced sex and to identify risk factors in this age-group.

To address these limitations of prior work, we analyzed data from the National Longitudinal Study of Adolescent Health (Add Health) in order to estimate the national prevalence of forced sex among adolescent women in grades 7–12, as well as to determine the relationship between prior forced sexual intercourse and subsequent sexual victimization in this population. On the basis of existing research,²³ we hypothesized that prior sexual victimization would increase the risk of sexual victimization in this age-group. In addition, because individual and contextual factors may produce conditions that facilitate victimization, we expected that the effects of prior sexual victimization on revictimization would be mediated by such variables.

METHODS

Data Source and Study Sample

Add Health is a panel study of a nationally representative sample of 7th–12th graders. From a sampling frame that included all U.S. school districts with a high school, Add Health obtained enrollment rosters of 132 schools. A random sample of adolescents was selected from these rosters and was invited to participate in confidential in-home interviews at Wave 1 (April–December 1995) and again at Wave 2 (January–December 1996). Overall response rates were 79% for the first wave and 88% for the second. A total of 20,745 adolescents participated at Wave 1, making Add Health the largest national probability sample of adolescents ever conducted in the United States. Additional details on Add Health appear elsewhere.²⁴ We analyzed Wave 1 and Wave 2 data for the 7,545 female respondents who participated in both waves.

Variable Selection

Because the availability of theoretical models for sexual victimization among younger adolescents is limited, we adapted models developed for college-age and older women.²⁵ We conceptualized sexual victimization among adolescent females as a function of prior sexual intercourse and prior sexual victimization, the effects of which are mediated by individual and contextual variables.

All predictor variables were measured at Wave 1. Age and race or ethnicity were unmodified from the Add Health file. Following Halpern and colleagues,²⁶ we used highest parental educational level as a proxy for socioeconomic status. For disability, we used a question that asked if respondents had a permanent physical disability affecting use of their hands, feet or limbs. We constructed dichotomous indicators of marijuana and cocaine use in the past 30 days, and an indicator of any alcohol use in the past year.

We used Add Health's feelings scale as a measure of emotional distress. This scale elicits a variety of affective, somatic and cognitive symptoms of depression occurring in the past week, and has good psychometric properties (Cronbach alpha=0.82). We standardized individual items on the scale, summed them to form a scaled score and then re-standardized the scaled scores to a mean of zero and standard deviation of one, as described by Resnick et al.²⁷ A higher score represents a greater degree of emotional distress.

Following Sieving and colleagues,²⁸ we used five survey items to measure maternal connectedness with a five-point Likert scale: the respondent's perceptions of her mother's warmth and lovingness, communication, encouragement of independence and assistance in understanding consequences of actions, and the respondent's overall satisfaction with the quality of the relationship (Cronbach alpha=0.84). We standardized the measure as described above for the feelings scale. A higher score indicates a poorer mother-daughter relationship.

We used five items from Add Health's fighting and violence scale (Cronbach alpha=0.69)²⁹ to construct a dichotomous variable indicating whether or not the respondent had witnessed or experienced nonsexual violence in the past year. Respondents were coded as having been exposed to violence if they reported having seen someone shot or stabbed; had a gun or knife pulled on them; been shot, cut or stabbed; or been jumped.

History of a romantic relationship was assessed by responses to the question "In the last 18 months, have you had a special romantic relationship with anyone?" Respondents who answered yes were asked about noncoital sexual behaviors within that relationship. For these respondents, we constructed dummies classifying noncoital sexual behavior within the relationship into three categories: genital touching; nongenital touching only, under clothes or while naked; and no touching. Young women who engaged in genital touching were coded in that group irrespective of other touching. We coded the two noncoital touching dummies so that in the multivariate models, each dummy estimates the difference between the named noncoital behavior and no sexual touching among those who, at baseline, were in a romantic relationship and had never had sexual intercourse.

We included one sexual history variable, sexual intercourse, which Add Health defines with the statement "When we say sexual intercourse, we mean when a male inserts his penis into a female's vagina." We constructed an indicator variable of history of sexual intercourse from the question "Have you ever had sexual intercourse?"

The outcome variables were sexual victimization at Wave 1 and between Waves 1 and 2. At Wave 1, Add Health asked respondents "Were you ever physically forced to have sexual intercourse against your will?" At Wave 2, female respondents were asked whether they had been "physically forced to have sexual intercourse against [their] will" since the time of the last interview. We constructed our outcomes of sexual victimization from these two questions.

TABLE 1. Percentage of adolescent women reporting ever having been forced into sexual intercourse, by selected characteristics, according to timing of forced intercourse, National Longitudinal Study of Adolescent Health

Characteristic	N	% forced into intercourse	
		By Wave 1	Between Waves 1 and 2
Total	7,545	6.6	2.3
Age			
12–14	2,324	2.4	1.2
15–17	4,158	8.8	3.0
≥18	471	15.5***	4.1***
Race/ethnicity			
Black	1,558	9.8	2.3
Asian	452	2.5	1.7
Hispanic	1,149	4.0	1.4
Native American	122	8.1	4.6
White	3,610	6.5	2.4
Other	60	5.2	4.0
Had had intercourse by Wave 1			
Yes	2,492	21.3	4.6
No	5,053	0.0***	1.3***
Had had forced intercourse by Wave 1			
Yes	504	na	7.6
No	7,041	na	1.9***
Highest parental educational level			
College graduate	976	4.0	1.3
Some college	3,665	6.6	2.7
<high school	2,490	7.4	1.7
Had a permanent physical disability			
Yes	182	12.6	1.8
No	7,363	6.4*	2.3
Used alcohol in past year			
Yes	3,323	10.3***	3.6***
No	4,222	3.6	1.2
Used marijuana in past 30 days			
Yes	873	14.5	4.9
No	6,672	5.5***	1.9***
Used cocaine in past 30 days			
Yes	68	15.0	16.2
No	7,477	6.5*	2.2***
Had a romantic relationship in past 18 mos.			
Yes	4,085	10.2	3.3
No	3,460	2.4***	1.1***
Noncoital sexual behaviors within the romantic relationship†			
No touching	3,352	12.5	3.4
Nongenital touching	701	0.0	2.9
Genital touching	437	0.0‡	4.2
Was exposed to violence in past year			
Yes	1,226	13.5	3.9
No	6,319	5.3***	2.0**

*p<.05. **p<.01. ***p<.001. †Applies only to respondents reporting a romantic relationship not involving sexual intercourse in the past 18 months and refers to the first such relationship in that time period. Variable is hierarchical: Respondents reporting both types of touching are listed in the most intimate category (genital touching). ‡Weighted F statistic cannot be computed because of the null cells. Notes: Wave 1: April–December 1995; Wave 2: January–December 1996. Ns are unweighted; percentages are weighted. P-values are from weighted, design-based F tests, providing a test of global significance for each variable. na=not applicable.

Analyses

We weighted all analyses to account for the complex sampling design of Add Health. Point estimates for correlations between continuous predictors were calculated using an-

TABLE 2. Odds ratios (and 95% confidence intervals) from multivariate analyses assessing associations between selected characteristics and reports of forced sexual intercourse at Wave 1

Characteristic	Model 1	Model 2	Model 3
Age	1.5 (1.4–1.7)***	1.5 (1.3–1.6)***	1.4 (1.3–1.5)***
Race/ethnicity			
Black	1.3 (0.9–2.0)	1.6 (1.1–2.3)*	1.6 (1.1–2.4)*
Asian	0.3 (0.1–0.8)*	0.4 (0.2–1.0)*	0.3 (0.1–0.7)**
Hispanic	0.5 (0.3–0.8)*	0.5 (0.3–0.9)*	0.5 (0.3–1.0)*
Native American/ other	1.0 (0.6–1.9)	1.0 (0.6–1.9)	1.1 (0.6–2.1)
White (ref)	1.0	1.0	1.0
Highest parental educational level			
College graduate	0.5 (0.4–0.7)***	0.5 (0.4–0.7)***	0.6 (0.4–0.9)**
Some college	0.8 (0.6–1.1)	0.8 (0.6–1.1)	1.1 (0.8–1.6)
<high school (ref)	1.0	1.0	1.0
Had a permanent physical disability	1.7 (0.9–3.4)	1.6 (0.8–3.3)	1.8 (0.8–3.7)
Used alcohol in past year	na	2.2 (1.6–3.1)***	1.7 (1.2–2.5)**
Used marijuana in past 30 days	na	1.8 (1.3–2.4)***	1.5 (1.1–2.1)**
Used cocaine in past 30 days	na	1.3 (0.6–3.2)	0.8 (0.3–2.0)
Emotional distress†	na	1.2 (1.0–1.3)**	1.4 (1.3–1.6)***
Maternal connectedness†	na	na	1.1 (1.0–1.3)
Had a romantic relationship in past 18 mos.	na	na	2.1 (1.5–3.0)***
Was exposed to violence in past year	na	na	1.9 (1.4–2.7)***
<i>F(df)</i>	9(119)***	13(115)***	16(112)***

* $p < .05$. ** $p < .01$. *** $p < .001$. †Standardized variable with a mean of zero and standard deviation of one; odds ratios reflect a change in odds per standard deviation. Notes: $N = 6,616$. Each model also contains a continuous predictor indicating elapsed time between interviews (not shown). History of sexual intercourse at Wave 1 and noncoital behaviors within the romantic relationship perfectly predicted being forced into sex by Wave 1 (see Table 1); therefore, these variables were dropped from the analysis. Odds ratios of 1.0 are due to rounding down of estimates. ref=reference category. na=not applicable.

alytic weights, and significance levels were calculated using survey-based variance estimates for these correlations. We assessed all bivariate associations between predictors and outcomes with simple logistic regression for continuous variables and chi-square analyses of homogeneity for categorical variables. Design-based F statistics were used to assess significance levels. Predictors for which $p < .2$ were retained in multivariate models.

We conducted two survey-weighted multivariate logistic regressions to test the association between a history of forced sex and revictimization, and to determine possible mediators of this relationship. We first regressed lifetime history of forced sexual intercourse on predictors using only Wave 1 data, to identify predictors of sexual victimization at that time point. We then regressed being forced into sexual intercourse between Waves 1 and 2 on history of forced sex, controlling for mediating variables, to identify predictors of sexual victimization during that time interval. Any variable that diminished the association between history of forced sex and revictimization was considered a mediator of that relationship.

For each of these analyses, we introduced predictors in cumulatively staged sets. Model 1 included only social and

demographic characteristics, disability status and history of intercourse; for model 2, we added substance use and emotional distress; model 3 added interpersonal and familial contextual variables (maternal connectedness, romantic relationships, noncoital sexual behavior within these relationships and exposure to violence). Variables that predicted the outcome perfectly were not included in logistic regression models. To control for differences in exposure to the risk of forced sex, all models included a continuous measure of elapsed time between the two waves of Add Health for each respondent. Only variables significant at the .05 level were considered statistically significant in final multivariate models. Standard errors were appropriately corrected for weighting and clustering. We conducted all analyses with STATA version 8.³⁰

RESULTS

Descriptive and Bivariate Analyses

At Wave 1, 31% of the sample reported having ever had sexual intercourse, and 54% reported having had a romantic relationship in the past 18 months.

Seven percent of adolescent women reported at Wave 1 that they had ever been forced into sexual intercourse (Table 1, page 227). The proportion ever victimized increased with age, reaching 16% among women aged 18 or older. In all, 2% of adolescent women were sexually victimized between Wave 1 and Wave 2. The rate of victimization between waves also increased with age, reaching 4% among respondents 18 years of age or older. Among women who had been victimized by the first wave, 8% were revictimized between waves. By Wave 2, 8% of the total sample reported having been forced into sexual intercourse (not shown).

In bivariate analyses, adolescent women who had a history of sexual intercourse were significantly more likely to have been sexually victimized by Wave 1 than were their counterparts without such a history (Table 1). Presence of physical disability, substance use, having had a romantic relationship in the past 18 months and exposure to violence were all associated with sexual victimization. In addition, the higher the level of emotional distress, and the lower the level of maternal connectedness, the greater the likelihood that a respondent had experienced forced intercourse (not shown).

Most of these variables were also significantly associated with sexual victimization occurring between the survey waves; the exception was disability status (Table 1). Compared with respondents reporting no history of sexual intercourse, young women who had had sex by Wave 1 had a significantly higher rate of sexual victimization between waves; of note, however, 39% of all those victimized during this period had never had sex before the survey (not shown). Those who had been sexually victimized by the first survey wave had significantly elevated odds of being victimized between waves (not shown). High levels of emotional distress and low levels of maternal connectedness continued to be related to higher odds of forced sex between the waves (not shown).

Multivariate Analyses

Many but not all of the factors associated with sexual victimization by the first wave in bivariate analysis were also associated with this outcome in multivariate analysis (Table 2). In the model that included only social and demographic characteristics and disability status, the odds of victimization increased with age (odds ratio, 1.5 per each additional year). They were reduced for Asian and Hispanic women relative to white women (0.3 and 0.5, respectively), and among women whose parents were college graduates relative to those whose parents had less than a high school education (0.5).

When variables related to substance use and emotional distress were added to the model, alcohol use, marijuana use and emotional distress were significant predictors (odds ratios, 1.2–2.2), whereas cocaine use was not. The addition of contextual variables revealed that women who had a history of a romantic relationship or exposure to violence had elevated odds of having been forced into sex by Wave 1 relative to their counterparts without such histories (2.1 and 1.9). However, maternal connectedness was not significantly associated with the outcome.

Similarly, the results of multivariate analyses of sexual victimization between survey waves confirmed some of the findings of bivariate analyses but not others (Table 3). In the model that included only social and demographic characteristics, disability status and history of intercourse, the odds of victimization were elevated among women who had had sex by Wave 1 (odds ratio, 2.6). But independent of that risk, young women with a history of sexual victimization had two times the odds of being victimized during this period relative to those without such a history (2.0).

When substance use and emotional distress were added to the model, both prior sexual intercourse and history of sexual victimization still significantly predicted victimization (odds ratios, 1.9 and 2.0). The odds of sexual victimization were elevated for adolescent women who reported alcohol or cocaine use (2.0 and 5.4), and rose with increasing level of emotional distress (1.2).

Finally, when contextual variables were added to the model, prior victimization no longer predicted sexual victimization. Only one contextual variable in the set—genital touching—was significantly related to sexual victimization between the waves and was therefore a likely mediator of revictimization. Specifically, adolescent women who engaged in genital touching within the context of a romantic relationship had nearly three times as high odds of being sexually victimized as their counterparts who did not engage in any touching (odds ratio, 2.7). In this model, the odds of victimization were still significantly elevated for respondents who had high levels of emotional distress (1.4), who were sexually experienced at the first wave (2.3) and who reported using cocaine or alcohol (4.7 and 2.0).

DISCUSSION

We present the first national prevalence estimates of forced sexual victimization and revictimization among adolescent women in grades 7–12. Eight percent of the total final sam-

TABLE 3. Odds ratios (and 95% confidence intervals) from multivariate analyses assessing associations between selected characteristics and reports of forced sexual intercourse between Waves 1 and 2

Characteristic	Model 1	Model 2	Model 3
Age	1.1 (1.0–1.3)	1.1 (1.0–1.2)	1.0 (0.9–1.2)
Race/ethnicity			
Black	0.7 (0.4–1.4)	0.9 (0.5–1.6)	1.0 (0.5–1.9)
Asian	0.8 (0.3–2.6)	0.9 (0.3–2.8)	1.1 (0.4–3.5)
Hispanic	0.6 (0.3–1.1)	0.6 (0.3–1.0)	0.7 (0.4–1.3)
Native American/ other	1.7 (0.7–4.1)	1.7 (0.7–4.2)	2.0 (0.9–4.9)
White (ref)	1.0	1.0	1.0
Had had intercourse by Wave 1	2.6 (1.6–4.3)***	1.9 (1.1–3.3)*	2.3 (1.1–4.6)*
Had had forced intercourse by Wave 1	2.0 (1.2–3.4)***	2.0 (1.2–3.4)**	1.5 (0.8–2.6)
Highest parental educational level			
College graduate	0.8 (0.4–1.3)	0.7 (0.4–1.3)	0.8 (0.5–1.5)
Some college	1.0 (0.7–1.5)	1.0 (0.6–1.5)	1.2 (0.8–1.9)
<high school (ref)	1.0	1.0	1.0
Had a permanent physical disability	0.6 (0.2–1.9)	0.5 (0.1–1.4)	0.3 (0.1–1.3)
Used alcohol in past year	na	2.0 (1.1–3.5)*	2.0 (1.0–4.0)*
Used marijuana in past 30 days	na	1.1 (0.6–2.0)	1.0 (0.6–1.7)
Used cocaine in past 30 days	na	5.4 (1.9–15.0)**	4.7 (1.6–14.2)**
Emotional distress†	na	1.2 (1.0–1.3)**	1.4 (1.3–1.6)***
Maternal connectedness†	na	na	1.0 (0.8–1.2)
Had a romantic relationship in past 18 mos.	na	na	1.1 (0.6–1.9)
Noncoital sexual behaviors within the romantic relationship			
No touching (ref)	na	na	1.0
Nongenital touching	na	na	0.9 (0.4–2.4)
Genital touching	na	na	2.7 (1.0–7.4)*
Was exposed to violence in past year	na	na	1.2 (0.7–2.0)
F(df)	11(117)***	15(113)***	20(108)***

*p<.05. **p<.01. ***p<.001. †Standardized variable with a mean of zero and standard deviation of one; odds ratios reflect a change in odds per standard deviation. Notes: N=6,616. Each model also contains a continuous predictor indicating elapsed time between interviews (not shown). Odds ratios of 1.0 are due to rounding down of estimates. ref=reference category. na=not applicable.

ple had been forced to have sex against their will—7% by the first wave and 2% between waves (including some who had been victimized earlier). Of all young women victimized between the waves, 39% had never engaged in sexual intercourse as of Wave 1, suggesting that, for many of these adolescents, their first sexual experience ever may have been forced.

The prevalence of forced sex in the present study is lower than the proportions observed in smaller-scale or convenience samples (e.g., 21%³¹ and 13%³²), and in national samples such as the 2003 YRBS³³ (12% of females in grades 9–12). Add Health's behaviorally explicit question on forced sex elicits completed acts of sexual intercourse. Surveys that do not use such explicit language may elicit, in addition, partially completed sexual acts and other forms of sexual intimidation that do not involve genital intercourse, which may be more prevalent than penetrative intercourse.³⁴

Strikingly, 8% of adolescent women who had been vic-

timized before the first wave reported revictimization by the follow-up time point. This finding provides a unique perspective because of the short time frame in which revictimization occurred. Other studies have examined the relationship between childhood or adolescent sexual abuse and later adult sexual revictimization, but not revictimization within a longitudinal adolescent sample.

Mirroring findings from a large body of literature on adult sexual revictimization,³⁵ having been sexually victimized before the first wave was a risk factor for experiencing forced sex between survey waves in bivariate analyses. Our prospective analyses help to elucidate the factors that may put adolescent women at risk for additional victimization experiences. On an individual level, young women who have been sexually victimized may try to alleviate emotional distress with alcohol and drug use, which can impair judgment and reduce ability to escape from dangerous situations. At an interpersonal level, adolescent women who are engaging in sexual intercourse may increase their risk of exposure to concealed, unsafe situations in which adult supervision is low. These factors may set the stage for victimization and may work synergistically to facilitate victimization. As suggested by our findings that the effects of prior victimization weakened in the presence of contextual variables, adolescent women who engage in either intercourse or noncoital genital touching may be at increased risk, because any type of exposure to sexual situations may expand opportunities for sexual victimization.³⁶

This interpretation is consistent with problem behavior theory, which posits the existence of one underlying problem behavior syndrome, or general tendency toward health risk, that may be facilitated by adolescents' environmental contexts.³⁷ As suggested by prior work,³⁸ forced sex may be a symptom of a generally risky interpersonal life context that facilitates victimization and consequent revictimization.

Despite the strength of our mediational results, our study is limited in its ability to explain the mechanisms behind the relationship between victimization and revictimization. Being victimized may have a causal effect on later victimization, if experiences with forced sex induce changes in individuals that make subsequent forced sex more likely. Alternately, both initial and subsequent forced sex may have the same or similar origins, and victimization may be a marker of an underlying third, unmeasured variable, such as a generally risky environment. Our study examined only risk factors, not sequelae, of forced sex at two points in time; an examination of long-term longitudinal changes in both psychosocial risk factors and consequences of forced sex is needed to tease apart these explanations.

Our study has other limitations. Our emphasis on completed acts of sexual intercourse does not take into account the broad range of sexual victimization experiences (e.g., attempted rape, verbal coercion, digital penetration). Thus, our data likely underestimate the prevalence of sexual trauma in this population. Other research, albeit with smaller, convenience samples, has observed that adolescents have experienced a range of unwanted sexual experiences be-

yond intercourse.³⁹ Certainly, sexual victimization other than completed acts of forced sex can also have detrimental health consequences.⁴⁰ In addition, genital contact within romantic relationships was a key predictor of sexual victimization. However, participants were not given a definition of romantic relationship and therefore could have interpreted this term in different ways. Add Health does not provide additional descriptors that could have been used to specify different types of romantic relationships (e.g., casual or steady partner) and thereby elucidate the qualities of such relationships that may lead to victimization.

Our data (and most other research on this topic) tell us neither the identity of the perpetrator nor whether individuals are likely to be revictimized by the same person. For adolescent women who are victimized by their dating partners, school-based interventions, which have been successful at reducing sexual dating violence among adolescents,⁴¹ would be highly efficacious. In addition, repeat victimization by the same person would have different implications for the nature of interventions, as well as the causes of victimization. Interventions for adolescents who are repeatedly victimized by the same person would involve identifying that person and removing the adolescent, perpetrator or both from the environment (e.g., home or school). Interventions for adolescents who are repeatedly victimized by different individuals are more complex, because such patterns suggest that adolescents' problems are more deep-seated and may be linked with exposure to a generally risky environment. Information on the identity of perpetrators, especially with respect to revictimization, is undoubtedly needed to inform the design of effective programs to prevent sexual violence.

Other limitations stem from Add Health's exclusion of adolescents who are not attending school, such as those who have dropped out. These adolescents may be at elevated risk of forced sexual intercourse. Furthermore, only females in the Add Health sample were asked about being a victim of forced sex. Males were asked about perpetrating such acts. A small but substantial proportion of adolescent men report sexual victimization;⁴² little is known about the predictors and adverse consequences of forced sex for adolescent men.

Nevertheless, the value of the present analysis lies in its identification of risk factors for sexual victimization that can be used to develop early preventive interventions and alert clinicians to those in need of further attention. Sexual victimization has been associated with poor mental health, dissatisfaction with family life, weight problems, and suicidal ideation and attempts,⁴³ further underscoring the importance of developing early interventions to stem later psychosocial problems. In particular, health care providers, teachers and school counselors can play key roles in educating all youth about sexual health and victimization; by being attuned to adolescents' mental health symptoms, substance use and sexual history, they can assist in identifying adolescents who are most at risk. In addition, educational materials can be developed to alert adolescent women

to the risk of forced sex, especially from sexual activities such as noncoital genital touching. Furthermore, physicians may want to screen for sexual and physical victimization in order to identify a subset of adolescent patients for whom revictimization is more likely. Early intervention is essential to break the cycle of revictimization.

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Author contact: rraghavan@mednet.ucla.edu