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November 2002

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Zweig, Janine M.; Sayer, Aline; Crockett, Lisa J.; and Vicary, Judith R., "Adolescent Risk Factors for Sexual Victimization: A Longitudinal Analysis of Rural Women" (2002). *Faculty Publications, Department of Psychology*. 237.

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## Adolescent Risk Factors for Sexual Victimization: A Longitudinal Analysis of Rural Women

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Longitudinal data were used to examine risk factors for sexual victimization among 237 young adult rural women. In this sample, 8% reported experiencing forced sex (*i.e.*, physically violent experiences) and a separate 22% reported experiencing coerced sex (*i.e.*, external psychological manipulation, substance-related coercion, or internal psychological pressure.) Women who had more educated mothers had a greater probability of reporting forced sex. In addition, mothers' education moderated the relationship between individual risk factors and the probability of reporting forced sex. For women with less educated mothers, higher frequency of sexual activity during adolescence was related to an increased probability of reporting forced sex. For women with more educated mothers, higher frequency of sexual activity was related to a decreased probability of reporting forced sex. Frequency of sexual activity during adolescence was also related to coerced sex, with higher frequency of sexual activity predicting a greater probability of reporting coerced sex.

Sexual victimization is a common experience for women, with women much more likely than men to report sexual victimization experiences (Koss,

Gidycz, & Wisniewski, 1987; Laumann, Gagnon, Michael, & Michaels, 1994; Zweig, Barber, & Eccles, 1997). According to the National Crime Victimization Study, women 12 years and older report 500,000 rapes and sexual assaults annually (Bachman & Saltzman, 1995). There is considerable evidence that these experiences of sexual victimization have negative effects on women's psychosocial functioning (Erickson & Rapkin, 1991; Zweig *et al.*, 1997; Zweig, Crockett, Sayer, & Vicary, 1999). It is important to identify what factors place women at increased risk for sexual victimization because of the large number of women who experience victimization.

Many feminists avoid discussions of risk for sexual victimization, associating it with victim blame (Abbey, Ross, McDuffie, & McAuslan, 1996). They fear that studying risk factors is akin to employing a "victim precipitation" model, which assumes that personal characteristics of women precipitate rape episodes. However, Brownmiller (1975) argued that although any woman can be raped, some characteristics may increase the likelihood of rape. Along with individual factors, situational ones may also be important. Thus, studying risk factors related to victim characteristics and to the context surrounding victimization may help us understand, in part, the conditions under which women are raped. In this study, both individual risk factors (sexual behavior, substance use, and psychological adjustment) and contextual risk factors (family structure and maternal education) were examined.

### Sexual Activity

For adolescent and young adult women, sexual activity has frequently been associated with the likelihood of sexual victimization (Abbey *et al.*, 1996; Erickson & Rapkin, 1991; Himelein, Vogel, & Wachowiak, 1994; Koss & Dinero, 1989; Miller, Monson, & Norton, 1995; Mynatt & Allgeier, 1990; Vicary, Klingaman, & Harkness, 1995). For example, adolescent girls who are sexually active are more likely to report unwanted sexual experiences than those who are not sexually active (Erickson & Rapkin, 1991; Vicary *et al.*, 1995). For young adult women, the following three aspects of sexual behavior have been associated with a greater likelihood of reporting sexual victimization: (a) more frequent sexual experiences (Abbey *et al.*, 1996; Koss & Dinero, 1989; Mynatt & Allgeier, 1990), (b) greater numbers of dating and sexual partners (Abbey *et al.*, 1996; Himelein *et al.*, 1994), and (c) early onset of sexual activity (Himelein *et al.*, 1994; Miller *et al.*, 1995). These findings suggest the following sexual exposure hypothesis: The likelihood of being victimized increases when there is more "opportunity" for these experiences based on frequency of sexual activity and number of intimate partners (Koss, 1985).

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This research was supported by a grant from the Office of Adolescent Pregnancy Programs to Judith R. Vicary (Grant No. 000933-01) and a grant from the National Institute on Alcoholism and Alcohol Abuse to Lisa J. Crockett (Grant No. 1 R01 AA096787). Results are based on a dissertation conducted by the first author. The authors would like to thank Elizabeth Susman and Michael Johnson for their contributions to the study, all the members of the research project through the years who collected, coded, and entered data, and especially the study respondents themselves. Correspondence concerning this article should be addressed to Janine M. Zweig, the Urban Institute, 2100 M Street NW, Washington, D.C. 20037; e-mail: [jzweig@ui.urban.org](mailto:jzweig@ui.urban.org)

### Substance Use

Victimization often coincides with alcohol and/or drug use for both adolescent girls and young adult women. Female adolescents who experienced unwanted sexual activity were more likely than other adolescents to report personal problems with drugs or alcohol (Erickson & Rapkin, 1991). Adult women who experienced sexual assault also reported more frequent alcohol use than did nonvictimized women (Beckman & Ackerman, 1995; Canterbury, Grossman, & Lloyd, 1993; Koss & Dinero, 1989). With regard to sexual victimization episodes, women who experienced rape or attempted rape were more likely to report the use of alcohol during their assault by both themselves and their dates than women who were not assaulted (Abbey *et al.*, 1996). Intoxication, in particular, may increase a woman's vulnerability to assault. Muehlenhard and Linton (1987) found that dates that resulted in a sexual assault were more likely than other dates to involve heavy use of alcohol and/or drugs by both persons.

Several processes may underlie the association between substance use and victimization. First, perpetrators may find opportunities to victimize women in situations where alcohol and drugs are being used or may serve women alcohol and/or drugs with the intention of taking advantage of them sexually (Sanday, 1990). Second, men perceive women who drink alcohol as more sexually "available" than are women who do not drink alcohol (Beckman & Ackerman, 1995). Third, intoxication may impair a woman's ability to thwart an unwanted sexual advance (Muehlenhard & Linton, 1987). In any case, frequency of getting drunk or getting high on drugs may increase the risk of sexual victimization.

### Psychological Adjustment

Although the evidence is limited, some studies show that poor psychological well-being may increase the risk of victimization experiences. Vicary and colleagues (1995) examined the relationship between affect and victimization and found that girls who reported sexual assault during adolescence also reported more negative emotions (*i.e.*, lower emotional tone) prior to the assault than did their nonvictimized peers. Also, Boney-McCoy and Finkelhor (in press) noted that experiencing depressive symptomatology puts adolescents at risk for many types of victimization, including sexual victimization. However, the mechanisms that link psychological adjustment and increased risk for victimization thus far have not been examined.

### Contextual Risk Factors

Contextual risk factors may also increase a woman's likelihood of being victimized. Women who report growing up with one parent report higher levels of sexual abuse and sexual assault (Benedict & Zautra, 1993; Finkelhor, Hotaling, Lewis, & Smith, 1990; Moore, Nord, & Peterson, 1989; Zweig & Barber, 1995) than do those with two parents. It is not clear what mechanism may account for this difference, but it has been shown consistently in the literature.

Differences in reports of sexual victimization have also been found between low and high socioeconomic groups. According to the National Crime Survey, examining victimization that occurred after age 12, women in the lowest third of the income distribution were the most likely to have been raped (53% of victims) and women in the top third were the least likely to have been raped (15% of victims; Harlow, 1991). Moore *et al.* (1989) reported similar findings; however, the effect of poverty was diminished when other risk factors, such as parent behavioral characteristics, were controlled. The same authors examined the relationship between mothers' education and reports of victimization and found no significant association.

In sum, although all women are vulnerable to sexual victimization, certain individual and contextual factors may increase risk. However, many of the aforementioned studies have been cross-sectional, with putative risk factors and reports of victimization assessed at the same point in time. In such cases, there is no way to know if the risk factor, such as frequent sexual activity, actually preceded victimization. Longitudinal data are needed to determine temporal ordering of variables and the likely direction of influence (Muehlenhard, Harney, & Jones, 1992).

### Types of Sexual Victimization

Sexual victimization experiences have been measured in diverse ways. Some researchers measure unwanted sexual experiences without distinguishing between rape and pressured sex (*e.g.*, Erickson & Rapkin, 1991). Others measure forced sexual experiences without a clear description of the circumstances surrounding the victimization (*e.g.*, Laumann *et al.*, 1994). Still others make distinctions between types of sexual victimization experiences, such as physically violent experiences versus nonviolent experiences (Koss *et al.*, 1987; Zweig *et al.*, 1997, 1999). The distinction between types of sexual victimization experiences has proven important with respect to the psychosocial consequences of victimization. Zweig and colleagues (1997, 1999) found that

different types of sexual victimization experiences (based on different circumstances surrounding the victimization, such as the presence or absence of physical violence) were differentially related to adjustment problems. Distinguishing among types of sexual victimization may also be important in studies of risk factors, as different risk factors may predict different types of victimization experiences. Therefore, this study examined risk factors for both forced (*i.e.*, violent) and coerced sexual experiences.

### Research Questions and Hypotheses

Using longitudinal data, we compared young women who reported sexual victimization with those who did not on individual and contextual factors assessed in adolescence. Reports could refer to sexual victimization in either adolescence or young adulthood. Both adolescent and young adult experiences were included because most victimization occurs during this period. According to national crime statistics, women ages 16 to 24 are 3 times more likely to report rape than women of other ages (Harlow, 1991). Other studies have combined adolescent and adult reports of sexual victimization, arguing that the critical distinction is between prepubertal and postpubertal victimization experiences (Laumann *et al.*, 1994; Zweig *et al.*, 1999).

The goal of the study was to examine predictors of sexual victimization experiences, including both forced and coerced experiences. The following two research questions were posed: (a) Do contextual and individual risk factors predict the likelihood of reporting forced sex? and (b) Do contextual and individual risk factors predict the likelihood of reporting coerced sex? Building on the extant literature, the following three specific hypotheses were formulated:

*Hypothesis 1:* Higher frequency of sexual intercourse during adolescence would be related to greater risk of experiencing forced sex and coerced sex.

*Hypothesis 2:* Higher frequency of drunkenness and experience with drug use during adolescence would be related to greater risk of experiencing forced sex and coerced sex.

*Hypothesis 3:* Lower emotional tone would be related to greater risk of experiencing forced sex and coerced sex.

Given the paucity of literature on predictors of forced versus coerced sex, no specific predictions were made about differences in risk factors for these two types of victimization.

## METHOD

### Design

This study is part of a longitudinal study of rural youth. The design of the original study was a longitudinal cohort-sequential design (Baltes, Reese, & Nesselrode, 1977). Starting in 1985, three cohorts of adolescents (seventh, eighth, and ninth grades in 1985) from one rural school district were followed for 12 years. Assessments were conducted annually during junior and senior high school, with periodic follow-ups after high school, for a total of eight waves of data.

### Procedure

During the fall of each school year, students were separated by gender for one class period while trained project members administered in-school written surveys (Crockett, Bingham, Chopak, & Vicary, 1996; Vicary *et al.*, 1995). No school officials were present during survey administration, and no names appeared on survey forms. Confidentiality of responses was stressed. Adolescents whose parents refused to allow them to participate were excluded.

In 1995, all previous participants were contacted to collect data on their experiences as young adults. They were mailed a survey (Survey 8) with questions assessing educational and work experiences, romantic partnerships, parenting, psychological adjustment, substance use, and sexual experiences. After completion of the survey, participants were contacted for in-depth phone interviews exploring the transition to adulthood.

### Sample

The Appalachian public school district included two junior high schools, each with seventh, eighth, and ninth grades (Crockett *et al.*, 1996). All participants were Caucasian living in a geographically isolated rural area. The area was considered to be economically and educationally deprived when the study began in 1985 (Vicary, 1991). Participation rates were high. Of the eligible female students at Survey 1, 96% participated in the study (Vicary *et al.*, 1995).

These analyses are restricted to women who participated in both Survey 8 and the adolescent portion of the study at Grade 9. In total, 249 women participated in Survey 8, representing 71% of the female sample that ever partic-

ticipated in the study. Seven women were excluded from analysis because they reported childhood sexual abuse prior to age 12, an issue that is beyond the scope of this study. In addition, five women were excluded from analysis because of inconsistent reports of sexual victimization that could not be resolved; these women were excluded to avoid misclassification. Therefore, the sample for this study includes 237 women (68% of the female sample who ever participated in the study).

To test for bias related to differential attrition, women who participated in Survey 8 ( $n = 237$ ) and those who did not ( $n = 92$ ) were compared in terms of their Grade 9 data. A series of  $t$  tests were conducted to examine mean differences in frequency of drunkenness, frequency of sexual intercourse, participation in deviant behavior, attitudes regarding gender roles, emotional tone, self-esteem, school grades, quality of peer relationships, quality of family relationships, and mothers' education. These tests revealed only three differences: The attrited group had significantly higher frequency of drunkenness,  $t(307) = 2.66, p < .05$ , higher frequency of sexual intercourse,  $t(306) = 2.35, p < .05$ , and lower school grades,  $t(304) = -2.06, p < .05$  in Grade 9 compared with Survey 8 participants. The differences suggest that women who participated in Survey 8 showed less risky behavior in ninth grade than did the attrited group.

Ages ranged from 12 to 16 years ( $M = 14$ ) at Grade 9 and from 21 to 26 years ( $M = 23$ ) at Survey 8. At follow-up, 79% of the women lived in rural areas, 16.7% lived in suburban areas, and 12% lived in urban areas. Furthermore, 6% finished some high school only, 6% completed their general educational development diplomas, 27% graduated from high school, 12% had technical training after high school, 20% had some college, 26% graduated from college, and 3% had some graduate or professional training.

At Survey 8, 41% of the women were married, 14% were engaged, 4% were divorced or separated, 40% were single, and 1% were remarried. Almost all the women in the sample identified themselves as heterosexual (99%). Of the women, 95% reported having experienced sexual intercourse.

## Measures

To capitalize on the longitudinal nature of the data set, risk factors were measured at Grade 9 and sexual victimization experience was measured as reported by the young adult survey.<sup>1</sup>

**Sexual activity.** Sexual intercourse experience was measured by asking adolescents if they had "been sexually active (had sex)" using a 5-point frequency scale with anchors at 1 (*never happened*) and 5 (*happens almost every day*).

Scores on this item are positively correlated with scores on "making out" ( $r = .66$ ) and "being touched in a private place" ( $r = .66$ ), indicating convergent validity (Ohannessian & Crockett, 1993).

**Substance use.** Two items examine the use of alcohol and drugs during adolescence (Swisher, Shute, & Bibeau, 1984). These items assess the frequency with which participants have been drunk and/or been high on drugs using a 5-point frequency scale with anchors at 1 (*never happened*) and 5 (*happens almost every day*). For been high on drugs, responses were recoded into a dichotomous variable reflecting 0 (never) and 1 (ever been high on drugs) because relatively few participants reported using drugs at Grade 9.

**Psychological adjustment.** Adolescents' emotional well-being was assessed with the emotional tone scale from the Self-Image Questionnaire for Young Adolescents. This measure assesses participants' feelings of happiness, sadness, and anxiety, with higher scores reflecting more positive mood (Petersen, Schulenberg, Abramowitz, Offer, & Jarcho, 1984). Examples of the 11 items are "Most of the time I am happy" and "I feel empty emotionally most of the time." The response scale is a 6-point Likert-type scale with anchors at 1 (*very strongly agree*) and 6 (*very strongly disagree*). A high scale score reflects better emotional adjustment. Estimates of construct validity were assessed through factor analysis and through correlations with other self-image scales (Petersen *et al.*, 1984). Validity estimates were acceptable. Cronbach's alpha was .87 for Grade 9 female students.

**Family structure.** Participants were asked, "Which adults do you live with most of the time? (check all that apply)." For this study, responses were coded into three types of households: natural mother and father households (coded as 1), one parent households (coded as 2), and stepfamilies (coded as 3).

**Mothers' educational attainment.** At Grade 9, participants were asked how much schooling their mothers had received. Responses included *grade school only* (1), *some high school* (2), *finished high school* (3), *technical training* (4), *some college* (5), *finished college* (6), and *beyond college* (7). In this study, mothers' education is examined as an indicator of socioeconomic status.<sup>2</sup>

**Sexual victimization.** For this study, measures of sexual victimization focused on intercourse experiences (*i.e.*, vaginal intercourse, oral intercourse, or anal intercourse). The intent was to include women who had victimizing in-



tercourse experiences of any kind while excluding experiences such as forced kissing or forced sexual exposure.

Participants were asked, "Have you ever had sexual intercourse with someone when you didn't want to?". If yes, participants then answered questions regarding the type of sexual victimization they had experienced using a measure adapted from two existing measures (Koss & Oros, 1982; Muehlenhard & Cook, 1988). Women were divided into two categories based on the type of sexual victimization experienced (see the appendix). Those who reported the threat or actual use of violence by perpetrators (Items 4, 5, 6, and 7) were categorized into a forced sex group. Women were categorized into a coerced sex group if they experienced internal psychological pressure, substance-related coercion, or external psychological manipulation (Items 1, 2, 3, 8, 9, 10, 11). If women reported both coerced and forced sexual experiences, they were categorized into the forced sex group, which was considered the more severe experience.

## RESULTS

### Descriptive Statistics on Sample Characteristics

Of the women in the sample, 71 (30.0%) reported having experienced sexual victimization. Within this group, 52 (73.2%) women reported coerced sexual experiences (*i.e.*, internal psychological pressure, substance-related coercion, and external psychological manipulation) and 19 (26.8%) women reported forced sexual experiences (*i.e.*, physical violence or threat of violence by perpetrators). The remaining women in the sample reported no prior sexual victimization ( $n = 156$ , 65.8%). Of the women, 10 (4.2%) did not answer the initial question on sexual victimization.

### Analytic Strategy

To identify predictors of sexual victimization, two sets of logistic regressions were conducted. One set contrasted women who were never victimized with those who were forced to have sex. The second set contrasted never victimized women with women who experienced sexual coercion. In both sets, the outcome was the probability of reporting victimization at young adulthood as a function of adolescent predictor variables.<sup>3</sup>

The logistic regression models were conducted using a hierarchical approach. First, family structure and maternal education were included in univariate logistic regression models predicting sexual victimization. If signif-

icant, these contextual variables were retained in subsequent models. Next, full models were tested, including the main effect variables (context variables and one individual risk factor) and the Context  $\times$  Individual factor interaction terms.

### Probability of Forced Sex

In the univariate models for forced sex, mothers' education significantly predicted the probability of forced sex group membership but family structure did not. The odds ratio for the association between forced sex and mothers' education was 1.42. That is, the odds of being in the forced sex group versus the never victimized group increased by 42% with a one-unit increase in mothers' education. Because the relationship was significant, mothers' education was retained in all subsequent models estimating the probability of forced sex.

Separate logistic models were then estimated that included mothers' education, one individual risk factor, and the interaction of mothers' education with the individual risk factor (see Table 1). Mothers' education significantly predicted forced sex in three of the four equations and showed a trend in the fourth. None of the individual factors was significant; however, there was a significant interaction between frequency of sexual intercourse and mothers' education. For women with less educated mothers, higher frequency of sexual activity predicted an increased likelihood of reporting forced sex. In contrast, for women with more educated mothers, higher frequency of sexual activity decreased the likelihood of reporting forced sex. Also, a trend-level effect was found for the interaction between mothers' education and adolescent drug use.

### Probability of Coerced Sex

Logistic regression was also used to model the probability of coerced sex as a function of adolescent risk factors. First, the context variables, family structure and mothers' education, were included as predictors in models. Neither variable significantly predicted membership in the coerced sex group; therefore, these variables were not retained in further regression models.

Next, individual risk factors were examined separately in univariate logistic regressions predicting probability of membership in the coerced sex group (see Table 2). Only one individual risk factor, frequency of sexual intercourse, was a significant predictor of coerced sex. The association between coerced sex and frequency of sexual intercourse was captured by the odds ratio of 1.47. In other words, the odds of victimization increased almost 50% with

**Table 1: Parameter Estimates and Associated Standard Errors for Logistic Regression Models Predicting Forced Sex by Contextual and Individual Risk Factors**

<i>Model: Independent Variables</i>	<i>Model Goodness of Fit</i>	<i>Parameter Estimate</i>	<i>Standard Error</i>	<i>Odds Ratio</i>
Model: Drug use	10.64**			
Intercept		-4.31	.86	
Mothers' education		0.52**	.18	1.68
Drug use		0.69	.96	2.00
Mothers' Education × Drug Use		-1.07*	.62	0.34
Model: Frequency of drunkenness	6.41*			
Intercept		-3.55	1.01	
Mothers' education		0.34**	.17	1.40
Frequency of drunkenness		0.04	.29	1.04
Mothers' Education × Frequency of Drunkenness		-0.26	.20	0.77
Model: Frequency of sexual intercourse	11.54**			
Intercept		-3.70	1.10	
Mothers' education		0.34*	.19	1.40
Frequency of sexual intercourse		0.06	.34	1.06
Mothers' Education × Frequency of Sexual Intercourse		-0.43**	.20	0.65
Model: Emotional tone	7.15*			
Intercept		-1.79	1.21	
Mothers' education		0.42**	.17	1.53
Emotional tone		-0.47	.30	0.62
Mothers' Education × Emotional Tone		0.09	.17	1.09

NOTE: \* $p < .10$ . \*\* $p < .05$ .

each unit increase in frequency of intercourse. A parallel trend was found for drug use. Interaction terms between context and individual factors were examined, but none was significant.

## DISCUSSION

These findings highlight the possible role of particular individual factors in young women's risk of sexual victimization. Frequency of sexual activity in adolescence significantly increased the probability of reporting coerced sex and also increased the odds of forced sex under some conditions. In contrast,

**TABLE 2: Logistic Regression Models Predicting Coerced Sex by Adolescent Risk Factors**

<i>Model: Independent Variables</i>	<i>Model Goodness of Fit</i>	<i>Parameter Estimate</i>	<i>Standard Error</i>	<i>Odds Ratio</i>
Model: Drug use	2.63			
Intercept		-1.22	.18	
Drug use		0.82*	.49	2.27
Model: Frequency of drunkenness	0.00			
Intercept		-1.12	.35	
Frequency of drunkenness		0.00	.17	1.00
Model: Frequency of sexual intercourse	6.20**			
Intercept		-1.75	.31	
Frequency of sexual intercourse		0.38**	.15	1.47
Model: Emotional tone	0.00			
Intercept		-1.14	.84	
Emotional tone		0.00	.19	1.00

NOTE: \* $p < .10$ . \*\* $p < .05$ .

neither substance use nor poor emotional tone in adolescence affected the risk of victimization.

These longitudinal findings regarding adolescent sexual behavior support and extend findings from cross-sectional studies. Abbey and colleagues (1996), Koss and Dinero (1989), and Mynatt and Allgeier (1990) all reported a positive association between frequency of sexual intercourse and the risk of sexual victimization. Unlike prior studies, however, this study differentiated between forced sex (which involved violence or threats of violence) and coerced sex (which involved unwanted sex for other reasons). With this more fine-grained approach, we found that higher frequency of sexual intercourse increased the risk of coerced sex among women in general but increased the risk of forced sex only among women with less educated mothers. These findings suggest that contextual variables such as maternal education may modify the effect of individual risk factors; such variables merit attention in future research.

These results do provide some support for the sexual exposure hypothesis in that greater frequency of adolescent sexual activity was associated with an increased probability of coerced sex in the total sample. For forced sex, however, a positive relationship between frequency of sexual activity and the odds of forced sex held only for women with less educated mothers; for women with more educated mothers, the association was reversed. Thus, the results

for coerced sex are fully consistent with the sexual exposure hypothesis but those for forced sex are only partially consistent. It is interesting that other research has also indicated that the sexual exposure hypothesis may apply only to some groups of women. Koss (1985) studied acknowledged rape victims (*i.e.*, women who reported they had been raped) and unacknowledged rape victims (*i.e.*, women who reported they were forced to have sex but did not report experiencing rape). The sexual exposure hypothesis was supported for acknowledged victims but not for unacknowledged victims. Taken together, these findings suggest the need to examine the conditions under which the sexual exposure hypothesis holds.

The lack of significant effects of substance use is interesting in that other research has shown a link between substance use and the likelihood of victimization (*e.g.*, Beckman & Ackerman, 1995; Canterbury *et al.*, 1993). Most of the prior research has been cross-sectional and does not permit a direct test of frequency of substance use prior to reports of victimization. It is possible that the link identified in earlier studies is inflated because it reflects both the effect of substance use on victimization and the effects of victimization on subsequent use. Our longitudinal results suggest that the frequency of substance use in ninth grade does not have much impact on the likelihood of sexual victimization. Perhaps the frequency of substance use in the weeks or months directly preceding victimization may be more predictive. Alternatively, frequency may be less important than the context and amount of use. Use in contexts where one is potentially vulnerable (*e.g.*, on a date or at a fraternity party) may increase the risk of victimization, particularly if use is heavy and leads to intoxication (Muehlenhard & Linton, 1987; Sanday, 1990).

One contextual variable, mothers' education, predicted forced sex. Women with more educated mothers had an increased probability of reporting forced sex. With one exception, this effect held when each individual risk factor was added to analytic models; the exception was frequency of sexual activity, where the main effect was subsumed by the interaction between mothers' education and frequency of sexual activity. In contrast, mothers' education did not predict reports of coerced sex.

The results for forced sex contrast with those of Moore and colleagues (1989), who found no significant association between mothers' education and reports of sexual abuse. Methodological differences between this study and the one by Moore and colleagues may be important. The sample in this study was from a rural White community, whereas Moore *et al.* used data from the National Survey of Children. Also, this study distinguished between forced and coerced sexual experiences, whereas Moore *et al.* measured whether par-

ticipants were forced to have sex or were raped. Although inconsistent with findings from the past, the findings in this study highlight the importance of considering contextual factors when examining risks for sexual victimization.

## Conclusions

This study contributes to the knowledge base regarding sexual victimization by using longitudinal data to examine antecedents of forced and coerced sexual experiences. The results indicate that individual and contextual factors should be examined in conjunction to fully understand the vulnerability women experience. However, the study has some important limitations. First, the analysis may not have been fully prospective in all cases. Because participants were not asked the age at which their first victimization occurred, in some few cases, victimization may have preceded ninth grade. Second, this analysis was based on a sample of rural White women and may not generalize to other populations. Findings may also be limited by sample attrition, which resulted in a sample of women with lower adolescent risk behavior and possibly with lower risk of sexual victimization.

Despite these limitations, this study contributes to our understanding of factors that may increase the risk of sexual victimization. First, it is clear that individual behavior (*i.e.*, frequency of sex) is an important antecedent of sexual victimization. Second, context, as captured by maternal education, is associated with the likelihood of experiencing forced sex and may interact with individual behaviors in affecting women's vulnerability to victimization. Third, our differing findings for forced and coerced sex support the utility of distinguishing among different types of victimization experiences rather than pooling them together.

## Appendix

Have you ever had sexual intercourse with someone when you didn't want to?

No (skip to No. 67)

Yes

Have you ever had sexual intercourse when you didn't want to because of the following reasons? (Check all that apply.)

1. You were so drunk or stoned that you were unaware of what was going on.

2. You were so drunk or stoned that you couldn't do anything to stop the other person.



- \_\_\_\_\_ 3. You were so drunk or stoned that you didn't care.
- \_\_\_\_\_ 4. The other person used physical violence (for instance, slapping, hitting).
- \_\_\_\_\_ 5. The other person held you down or made it so you couldn't leave.
- \_\_\_\_\_ 6. The other person threatened you with a weapon.
- \_\_\_\_\_ 7. You were afraid the other person would use physical violence (for instance, slapping, hitting).
- \_\_\_\_\_ 8. The other person threatened to end the relationship.
- \_\_\_\_\_ 9. The other person made you feel worthless or humiliated until you gave in.
- \_\_\_\_\_ 10. You felt obligated.
- \_\_\_\_\_ 11. You wanted to please the other person.

### Notes

1. If data for Grade 9 variables were not available for women who reported forced sex or coerced sex at young adulthood, then these data were imputed. If women participated in the study during Grade 7, 8, or 10, then their own data from one of these grades were substituted for the missing Grade 9 scores ( $n = 6$  women).

2. Although family income is the most appropriate measure of socioeconomic status, it was not measured for this sample. Therefore, mothers' educational attainment is used as an indicator of socioeconomic status. Some would argue that fathers' educational attainment is a more accurate reflection of socioeconomic status than is mothers' education; however, we use mothers' educational attainment for three reasons. First, for this sample, mothers' and fathers' educational attainment are highly correlated ( $r = .54, p < .001$ ). This finding is similar to demographic literature on marital homogamy, which demonstrates most women marry men of similar educational backgrounds (Blackwell, 1998; Lichter, 1990). Blackwell reported that up to 56% of spouses have similar educational attainment levels at the time of first marriage. Second, a reanalysis of these data using fathers' educational attainment yielded the same patterns of findings as those using mothers' education. Third, not all girls in the sample lived with their fathers; therefore, maternal education is more relevant to those girls who lived in single, female-headed households.

3. Two women were excluded from logistic regression predictor models because they reported having experienced forced sex prior to Grade 9 based on a different measure of sexual abuse experiences.

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