Published in final edited form as:

J Interpers Violence. 2012 August ; 27(12): 2503–2524. doi:10.1177/0886260511433518.

Prospective Effects of Method of Coercion in Sexual Victimization Across the First College Year

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Abstract

Women who enter college with a sexual victimization (SV) history may be at particular risk for deleterious outcomes including maladaptive alcohol involve posttraumatic stress, and re-victimization. Further, pre-college SV may be an impediment for the achievement of academic mile and may negatively impact the transition into college. Recent work shows that the method of coercion used in SV may be an important predictor of post-victimization outcomes. As such, the identification of pathways between type of SV and outcomes can aid in early identification and intervention for those at highest risk. In a sample of newly-matriculated female college students, this study examined unique outcomes associated with two specific types of SV, (1) threats/use of physical force (Force SV) or (2) incapacitation (Incap SV). Participants completed assessments of SV, alcohol involvement, posttraumatic stress, and academic outcomes at 6 time-points over their first year of college. Results showed differential outcomes based on pre-matriculation exposure to Force SV or Incap SV. Women with Incap SV were higher on problem drinking indices whereas women with Force SV were at greater risk for re-victimization and marginally more PTSD symptoms. Having a history of either type of SV predicted attrition, but there were no differences when comparing Force SV to Incap SV. Overall, results from this study support the utility of delineating SV experiences by method of coercion, and point to the potential of highlighting different outcomes in tailored intervention programs.

Keywords

alcohol and drugs; revictimization; sexual assault

Introduction

The ages of 18 to 24 mark a period of “emerging adulthood,” a time that, for many, overlaps with college attendance (Arnett, 2000). Emerging adulthood is characterized by major life shifts including a change in peers and social activities, a decrease in adult supervision, new responsibilities (e.g., independent living, academic demands), and a high rate of alcohol involvement (i.e., alcohol use, binge drinking, and alcohol consequences). Perhaps not

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

coincidentally, rates of sexual victimization (SV) peak during late adolescence and early adulthood and are highest for women attending college (Fisher, Cullen, & Turner, 2000; Humphrey & White, 2000; Kilpatrick et al., 2003). SV is associated with problem alcohol involvement, posttraumatic stress disorder (PTSD) symptoms, and revictimization (Humphrey & White, 2000; Kaysen, Neighbors, Martell, Fossos, & Larimer, 2006; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Tjaden & Thoennes, 2006; Zinzow et al., 2010). These outcomes may be especially salient concerns for matriculating college students, who are tasked with making many concurrent adjustments to college life (e.g., Ham & Hope, 2003; Montgomery & Côté 2005; O'Malley & Johnston, 2002; Pancer, Hunsberger, Pratt, & Alisat, 2000; Wechsler, 1996).

SV can be categorized by the method of coercion used in the assault, two of which are the threat/use of force (i.e., physical coercion) and victim incapacitation (Abbey, BeShears, Clinton-Sherrod, & McAuslan, 2004; Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007; McCauley et al., 2009; Testa, Livingston, Vanzile-Tamsen, & Frone, 2003; Zinzow et al., 2010). Physical coercion involves threats of physical harm or the actual use of physical force (e.g., being held down; Force SV). Incapacitated SV (Incap SV) involves sexual contact occurring when a victim is incapacitated by drugs or alcohol and is unable to object to, or to provide consent for, sexual contact.

Methods of Coercion in SV Research

Fifty percent or more of the sexual assaults that occur in young women occur before the age of 18 (Randall & Haskell, 1995; Tjaden & Theonnes, 2000). Therefore, many women enter college with a history of SV. As noted, the college years are a time of transition, taking place in a social and developmental context, which may contribute to risk for a number of hazardous outcomes for those with SV histories. These outcomes may be uniquely predicted by the type of victimization that they have experienced. Two such outcomes that have been examined are problem alcohol involvement and PTSD symptoms; however, several other outcomes highly relevant to the college milieu have been overlooked. For example, a large literature has shown past SV to be a strong predictor of revictimization (Fisher et al., 2000; Gidycz, Hanson, & Layman, 1995), yet, to our knowledge, no studies have examined if or how the method of coercion used during the SV may affect future revictimization risk. Similarly, academic achievement is an essential function of college, yet the effects of SV on this functional domain seldom are examined. Overall, the specific type of SV exposure may contribute differentially to any or all of these outcomes.

Alcohol involvement—SV has been linked to heavy and problematic drinking (Abbey, 2002; Abbey et al., 2004; Corbin, Bernat, Calhoun, McNair, & Seals, 2001; Marx, Nichols-Anderson, Messman-Moore, Miranda, & Porter, 2000). Although much research has examined alcohol as a risk factor for sexual assault (see Abbey, 2002; Abbey, Zawacki, Buck, Clinton, & McAuslan, 2001; Testa, Hoffman, & Livingston, 2010), studies also have shown an increase in maladaptive alcohol involvement following sexual trauma (Brady, Back, & Coffey, 2004; Chilcoat & Breslau, 1998). Often this is framed as a self-medication process whereby individuals drink as a means to cope (Khantzian, 1977). Though some data support a pathway where alcohol use follows sexual assault consistent with a self-

medication conceptualization, the evidence is equivocal. In a prospective study of women aged 18 years or older, Kilpatrick, Acierno, Resnick, Saunders, and Best (1997) demonstrated that odds of alcohol abuse significantly increased following sexual assault, even when controlling for baseline alcohol use. A later prospective study by Kaysen et al. (2006) also showed that college students with Incap SV had higher levels of alcohol involvement following victimization. In contrast, Testa, Livingston, and Hoffman (2007) did not observe increased drinking after SV once controlling for baseline alcohol use. Similarly, McCauley, Calhoun, and Gidycz (2010) examined binge drinking following different forms of SV in female college students and concluded that only prior binge drinking, and not method of coercion, predicted subsequent binge drinking episodes. Overall, it appears that the domain of alcohol involvement assessed (e.g., use, binge, consequences) is important and could account for discrepant findings. Demography may also play a role, with some evidence suggesting college student status to be a risk factor for deleterious drinking outcomes. Indeed, to date, it is not clear whether SV prior to college predicts alcohol involvement during college, and, moreover, if these associations differ based on method of coercion. As risky alcohol behavior is specifically implicated in the assault of women reporting an Incap SV, it is possible that alcohol outcomes may vary particularly for this group.

PTSD symptoms—The myriad negative psychological consequences that may follow SV, including posttraumatic stress (PTSD), are well documented (Neville & Heppner, 1999; Resick, 1993; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). However, little is known about whether psychological sequelae differ as a function of the method of coercion used in the sexual assault. In one of the few studies that sought to examine these associations, Brown, Testa, and Messman-Moore (2009) compared posttrauma symptoms reported by victims of Force SV and Incap SV. Results from this cross-sectional study showed that posttrauma symptoms were higher for SVs occurring via force relative to those occurring via incapacitation. Replication using longitudinal data is needed.

In sum, a review of the small body of literature conducted to date reveals that different types of victimization are uniquely associated with alcohol involvement and PTSD symptom outcomes. However, many other important outcomes associated with these different types of SV have yet to be examined.

Revictimization—Past SV is one of the most robust predictors of future victimization (Fisher et al., 2000; Gidycz et al., 1995; Himelein, 1995). Given that alcohol is a risk factor for SV (Abbey, 2002; Testa et al., 2010; Testa & Livingston, 2009), it is possible that individuals who report an Incap SV prior to college will be at greater risk for continued problematic alcohol use and hence revictimization during college than individuals who report a precollege Force SV.

College achievement—A primary task of college attendance is academic achievement, yet SV, and its related sequelae, have the potential to derail such achievement, as victims may be less able to adapt to the increased academic demands of college. Although the few studies that have examined the impact of SV on academic outcomes produced null results (e.g., Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Himelein, 1995), this

question merits further investigation as it remains unclear if academic outcomes are affected by SV as a whole, and if so, if this impact varies by method of coercion.

Taken together, though the current literature has generated important evidence regarding the outcomes associated with SV, tests of these associations across different methods of coercion, especially those employing longitudinal designs, are needed. Furthermore, the literature will be well served by broadening the scope of outcomes, which may be affected by these different types of SV.

Current Study

The current study sought to compare the prospective effects of two forms of SV in women over the 1st year of college—those occurring through threats/force (Force SV) and those occurring via incapacitation (Incap SV). Targeting women with different victimization histories during the high-risk transition into college is an important endeavor, as college matriculation provides important intervention opportunities that are unique to the college environment (i.e., methods for identifying and targeting high-risk individuals, accessible and affordable resources). Furthermore, the longitudinal design of this study and frequent points of assessment allowed for a more accurate examination of the associations between SV and the functional outcome domains targeted in this study. Specifically, we examined several indicators of alcohol involvement (i.e., alcohol use, “binge” drinking, and alcohol-related consequences), symptoms of PTSD, revictimization, academic performance (i.e., grade point average [GPA]), and attrition (i.e., dropout and transfer).

In examining these outcomes, we expected women reporting Incap SV to show poorer outcomes across most variables of interest. Our specific hypotheses were as follows: In comparison with women endorsing a precollege Force SV, women entering college with a history of Incap SV would report (a) higher levels of alcohol involvement in their 1st year of college, (b) a higher level of SV in their 1st year of college, (c) a lower GPA and will be more likely to drop out prior to their 2nd year of college. The one domain in which we expected worse outcomes for those with a history of Force SV was in PTSD symptoms. Here, consistent with previous cross-sectional work, we hypothesized that women reporting Force SVs would (d) endorse more PTSD symptoms than those with an Incap SV.

Method

Procedure

Data for the current study were collected as part of a larger longitudinal examination of trauma and substance use in college students (Read, Ouimette, White, Colder, & Farrow, 2011), conducted at two midsize public universities—one northeastern and one southeastern. The first stage of recruitment for the study began at one university in fall 2006 (Cohort 1) and the second stage of recruitment occurred at both universities in fall 2007 (Cohorts 2 and 3). From a larger pool of 3,991 surveys, a subset of screened participants was targeted for prospective follow-up ($N = 1,002$). Participants were selected for a strong representation of trauma exposure Criterion A; *DSM-IV-TR*, American Psychiatric Association, 2000) and PTSD symptoms (i.e., PTSD; Criterion A event consists of A1: experienced, witnessed, or

confronted with an event that involved life threat, serious injury, or threat to physical integrity, and A2: response to the event involved experiencing fear/helplessness/horror). Participants completed online surveys at six time points over the 1st year of college (Times 1–4 monthly during fall semester, Times 5 and 6 bimonthly during spring semester). To assess college attrition, data were also collected at the start of sophomore year (T7). Survey completion was compensated with gift cards. High retention rates (i.e., >90%) were achieved across all time points (T1–T7).

Participants

All female participants from the larger study comprised the current sample ($N = 649$). The majority ($N = 611$; 94%) were 18 years old (range 18–20). The ethnic breakdown was as follows: Approximately 72% of the women were White (non-Hispanic; $N = 465$), 11% Black (non-Hispanic; $N = 73$), 10% Asian ($N = 62$), 3% Hispanic/Latino ($N = 20$) and 4% Other ($N = 25$; 4 participants did not report ethnicity).

One hundred fifty-nine women reported a Force SV or Incap SV in their lifetime (24.5%). Of these women, 51 (32.1%) reported a Force SV and 108 (67.9%) reported an Incap SV. To directly compare outcomes for Force SV and Incap SV, groups were mutually exclusive and were created based on responses to the Revised Sexual Experiences Survey (SES: Koss, Gidycz, & Wisniewski, 1987; Koss & Oros, 1982; R-SES: Testa, VanZile-Tamsen, Livingston, & Koss, 2004; see Measures). Therefore, women reporting both types of SV ($N = 48$) were not included in the current study. We included women reporting a broad range of sexually coercive experiences (e.g., fondling, attempted rape, rape). The ethnic distribution was very similar to that of the larger sample.

Measures

Sexual Victimization—Two measures were used in this study to assess SV. One assessed method of coercion used in the victimization and the other measured the occurrence of revictimization, regardless of coercion used in the assault. Combining the data from these two empirically validated measures allowed for a unique and more complete look at SV that included both qualitative and quantitative information.

1. A revised version of the SES (Koss et al., 1987; RSES: Testa, VanZile-Tamsen, Livingston, & Koss, 2004; see Table 1) assessed for the occurrence of SV as well as the method of coercion involved in the SV. This measure was given at baseline (T1) to assess lifetime exposure to SV and was used to create the Force SV and Incap SV groups. The Force SV questions all began with the following wording “Has anyone threatened to physically harm you or used physical force (such as holding you down) to ...” The items assessing Incap SV began “when you were incapacitated (e.g., by drugs or alcohol) and unable to object or consent has anyone ever....” Thus, the grouping of Force SV and Incap SV was based on lifetime exposure and groups were designed to be mutually exclusive.
2. The Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000) is a self-report measure that assesses for Criterion A trauma exposure.¹ This measure was given at baseline to examine lifetime trauma exposure and at each subsequent time

point to assess ongoing Criterion A trauma exposure. For each event, respondents are asked to indicate if they had experienced that event. All affirmative responses were probed with follow-up queries regarding the number of times the event occurred on a 7-point scale ranging from *never* to *five times or more*. A revised online version of the TLEQ was used in the larger study and the current study used only the items pertaining to SV to examine the mean level of sexual (re) victimization across the 1st year of college. Thus, this measure was used to determine SV that had occurred prior to college matriculation (e.g., “Before your 12th birthday, did anyone touch sexual parts of your body ...”) as well as to continuously assess SV which occurred over the 1st year of college. The TLEQ has demonstrated good test-retest reliability and convergent and divergent validity (Kubany et al., 2000).

Alcohol Involvement

Alcohol use and binge drinking—Alcohol use was assessed using a modified version of the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Participants reported on quantity and frequency of alcohol consumption at T1 and at each assessment over the 1st year of college. A Quantity $\times$ Frequency index was created for each time point, and mean scores of this index were used to represent overall alcohol use. Binge drinking was defined as consuming five or more alcoholic drinks within a 2-hr period. The mean number of binge drinking episodes at each assessment point was used in the current analyses.

Alcohol-related consequences—The Young Adult Alcohol Consequences Questionnaire (Read, Kahler, Strong, & Colder, 2006) is a 48-item, dichotomous response measure, which assesses alcohol-related consequences across eight domains. Scores represent the total number of alcohol-related consequences experienced at baseline and at each assessment point. A mean score of alcohol-related consequences was generated to represent the average number of consequences experienced in the 1st year of college (alphas ranged from .92 to .96).

Psychological Sequelae

PTSD symptoms—The 17-item Posttraumatic Symptom Checklist—Civilian Version (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) was used to assess the three symptom clusters of PTSD: reexperiencing (e.g., intrusive memories), avoidance/numbing (e.g., avoiding talking about event), and hyperarousal (e.g., hypervigilance). Mean PCL scores were used in the analyses (alphas ranged from .93 to .96).

Academic Outcomes

GPA—Self-report of high school GPA was assessed at Time 1 (T1). College GPA was assessed via self-report at the end of spring semester (T6).

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College attrition—Attrition was assessed at the start of the participants' 2nd year of college (T7) to capture those students who did not return to campus after the summer break. Participants were considered to have attrited from college if they reported that they had “dropped out” or they were no longer enrolled in college. This group may have included students who transferred to different colleges. Participants continued to be assessed even if they were no longer enrolled in either of the study universities.

Analytic Approach

Data cleaning and preparation—Only alcohol consequences did not meet acceptable range for skew and kurtosis. Thus, six cases on the alcohol-consequences distribution (i.e., YAACQ scores) were rescored to fall within the acceptable skew and kurtosis parameters. All other variable distributions fell within acceptable ranges of skew and kurtosis (skew < 3; kurtosis < 8; Kline, 2010).

Management of missing data—Retention was strong in the current study and missing data were minimal. Still, several steps were taken to address any potential impact of missing data. First, for each dependent variable, a total percentage of participants missing one or fewer scores was calculated. Second, a dichotomous yes/no “missing” variable was calculated for each dependent variable. Subsequently, ANOVAs were run to compare groups on completeness of data. If a group difference was observed, the “missing” variable was included as a covariate in subsequent analyses.

Baseline analyses—To examine differences between different SV types, which could speak to vulnerability at the outset of college, we compared the Incap SV and the Force SV groups at baseline on past year alcohol use, past year alcohol consequences, Criterion A exposure, and high school GPA. Prior sexual assault differences also were examined using chi-square analyses.

Prospective analyses—Data were collected at each time point across the 1st year of college and a mean from T2 to T6 was calculated for alcohol use, alcohol-related consequences, PTSD symptoms, and revictimization. GPA was assessed at T6 and enrollment status at the start of the 2nd year of college was used to examine attrition.

To determine if the method of coercion used in the SV differentially predicted the outcome variables of interest over the 1st year of college, linear regression models were run. For alcohol use, binge drinking, alcohol consequences, and PTSD symptoms, baseline scores were entered as covariates in regression models. High school GPA was entered as a covariate in the models predicting college GPA. As the potential associations between GPA and SV have not been examined, analyses were run first collapsing across victimization types to determine if having a history of *either* form of SV predicted academic outcomes. Subsequently, Force SV and Incap SV were entered into the models. Chi-square analyses were used to determine if method of coercion was differentially related to the dichotomously scored attrition variable. Similar to the GPA analyses, attrition status was first explored by collapsing across victimization types and then models were run separately for Force and

Incap SV. Data also were examined for site effects (i.e., northeastern vs. southeastern). In cases where site differences emerged, site was entered as a covariate in the models.

Results

Missing Data

Analysis of percentage of participants with complete or almost complete data (i.e., missing data at no time point or one time point) on each dependent variable revealed the following: alcohol use = 83%; binge = 89%; YAACQ = 89%; PCL = 89%; revictimization = 90%; GPA = 84%; attrition = 93%. With one exception, the groups did not differ on missing data for outcome variables. For GPA, the Incap SV group had more missing data than the rest of the sample. Therefore, GPA regression models included missing data as a covariate.

Vulnerabilities by Method of Coercion: Baseline Analyses

Women endorsing an Incap SV prior to college matriculation reported more alcohol use, $t(155) = -10.1, p < .001$ (see Table 2), more frequent binge drinking episodes, $t(154) = -7.1, p < .001$, and more alcohol consequences, $t(144) = -6.8, p < .001$, than the Force SV group. Women with a history of Force SV reported more severe trauma histories at baseline, with almost twice as many prior Criterion A traumas than the Incap SV group (5.4 vs. 3.1), $t(157) = 5.4, p < .001$. Thus, it was decided to use the number of Criterion A events as a covariate when examining PTSD symptoms. In comparison to the Incap SV group, women who reported a Force SV also were more likely to report SV occurring before the age of 13 (30% vs. 7%), $\chi^2(1) = 15.3, p < .001$, as well as between the ages of 13 and 18 (47% vs. 19%), $\chi^2(1) = 13.0, p < .001$. There was no between group differences in high school GPA ($p = .76$).

Outcomes Based on Method of Coercion: Prospective Analyses

Alcohol use—Our hypothesis that the Incap SV group would report higher levels of alcohol use (i.e., Quantity $\times$ Frequency) than the Force SV group was not supported. Neither Force SV nor Incap SV predicted average quantity-frequency of alcohol use across the 1st year of college ($ps = .17$ and $.19$, respectively) beyond substantial autoregressive effects ($\beta = .77, p < .001$; see Table 3). Therefore, baseline level of alcohol use was the only predictor of subsequent alcohol use in these models, suggesting it is a stable behavior across groups.

Binge drinking—Our hypothesis that the Incap SV group would report more binge-drinking episodes was supported as Incap SV significantly predicted the occurrence of binge drinking over freshman year ($\beta = .10, p < .01$) above strong autoregressive effects of baseline binge drinking ($\beta = .72, p < .001$). Thus, Incap SV still predicted binge-drinking behavior above and beyond the effects of past binge drinking. Interestingly, Force SV predicted binge drinking, but in a negative direction, suggesting women who experienced a precollege Force SV were less likely to binge drink over their 1st year of college ($\beta = -.06, p < .05$).

Alcohol-related consequences—Congruent with our hypothesis, Incap SV significantly predicted increased alcohol-related consequences over the 1st year of college (β

$= .10, p < .01$), even when controlling for T1 consequences ($\beta = .72, p < .001$). Force SV did not predict alcohol-related consequences ($p = .99$).

PTSD symptoms—Our hypothesis that Force SV would uniquely predict PTSD symptoms was partially supported. Force SV ($\beta = .06, p = .06$), but not Incap SV ($p = .18$), marginally predicted PTSD symptoms over the 1st year of college even with baseline PTSD symptoms in the model ($\beta = .63, p < .001$). However, when we controlled for the number of precollege Criterion A traumas (e.g., cumulative trauma; Samuels, Ford-Gilboe, Wilk, Avison, & Ray, 2010), Force SV was no longer a predictor of PTSD symptoms ($p = .30$), suggesting this association was a function of prior trauma severity (Bernat, Ronfeldt, Calhoun, & Arias, 1998; Perkonig, Kessler, Storz, & Wittchen, 2000).

SV—Contrary to our hypothesis that Incap SV would be at greater risk for subsequent SV, Force SV significantly predicted ($\beta = .19, p < .01$) and Incap SV marginally predicted ($\beta = .07, p = .07$) sexual revictimization over the course of the 1st year of college.

GPA—Overall SV status at T1 (i.e., Incap SV and Force SV combined) did not predict GPA ($p = .19$) beyond strong autoregressive effects of high school GPA ($\beta = .40, p < .001$). Furthermore, models comparing Force SV and Incap SV also were not significant ($ps = .48$ and $.22$, respectively), suggesting neither form of victimization predicted 1st-year academic outcomes.

Attrition—Overall SV status was significantly associated with college attrition ($\chi^2 = 5.65, p < .05$). However, contrary to our hypothesis, attrition outcomes between Incap SV and Force SV did not differ significantly ($p = .22$). Thus, though a SV history predicted attrition, there was no differential prediction by type of coercion.

Discussion

The current study used two well-validated measures of SV to examine prospective associations between two different types of SV (Force SV and Incap SV) and seven functional outcomes; alcohol use, binge drinking, alcohol-related consequences, PTSD symptoms, SV, GPA, and college attrition. Several important differences between the Force SV and Incap SV groups emerged. One of the most significant findings to come out of this work was the difference in patterns of alcohol involvement that we observed in our two victimization groups. Baseline analyses revealed that Incap SV was associated with higher levels of alcohol use, binge drinking, and alcohol-related consequences. Thus, women with a history of Incap SV enter college as heavier and more problematic drinkers. Consistent with our hypotheses, Incap SV prospectively predicted higher levels of binge drinking and alcohol-related consequences over freshman year. These findings suggest that women who have experienced an Incap SV prior to college continue to drink hazardously through their 1st year of college and, as such, are at greater risk for alcohol-related consequences. In contrast, our data did not show the same pattern of hazardous drinking among those with a Force SV history. Notably, precollege Force SV actually predicted lower levels of binge drinking over the 1st year of college. Binge drinking in college most often occurs in the context of social situations. Thus, one interpretation of this is that these women, given the

forceful and interpersonal nature of the assault, may avoid social/interpersonal situations which places them at less risk for binge-drinking episodes. Consistent with prior cross-sectional work, Force SV modestly predicted PTSD symptoms over the freshman year. However, when the level of Criterion A trauma exposure was included in the models, Force SV was no longer a significant predictor. This is congruent with a large literature showing the trauma severity to be one of the strongest predictors of PTSD (Kessler et al., 1995) and points to the potential importance of examining the number/types of trauma endorsed by women who have experienced a Force SV prior to college matriculation.

Experiencing either a Force SV or an Incap SV was a risk factor for revictimization in the 1st year of college. However, although we hypothesized that women with an Incap SV history would be at greatest risk, results showed that Force SV was a significant predictor of subsequent SV whereas Incap SV was a marginal predictor of revictimization. This was particularly surprising in light of our finding that women with Force SV overall did not drink hazardingly over their 1st college year. Though alcohol use is a risk behavior for SV, it appears that the lower levels of drinking in these women did not buffer against risk for SV in the freshman year. This finding may best be understood in the context of work by Testa, VanZile-Tamsen, and Livingston (2004), which underscores the role of relationship to the perpetrator of the sexual assault. Specifically, victims of Force SV may be more likely to maintain intimate relationships with aggressive partners, and it may be these partners who later perpetrate revictimization. This is in contrast to Incap SVs, which are typically perpetrated by peers/casual dating partners who are familiar to the victim.

GPA was not predicted by overall victimization status (i.e., Incap SV and Force SV combined) or by Force SV or Incap SV uniquely. Therefore, it appears that academic performance is not significantly impaired for women who start college with a SV history—at least not in the 1st year of college. In contrast, women with a history of either form of SV were at higher risk for college departure. However, rates of college departure were not different between these two forms of SV. Although attrition rates were comparable across method of coercion, perhaps different factors could be attributed to attrition within these victimization types (e.g., PTSD symptoms vs. alcohol-related consequences, respectively). Thus, continued work in this area is merited.

Strengths, Limitations, and Future Directions

This study had several strengths and limitations to be considered. First, having the Force SV and Incap SV groups in the current study consisted of a broad range of severity of victimization (e.g., touching/fondling, attempted rape, and completed rape), which facilitated the inclusion of a range of SVs experienced by young women. Most studies of this nature examine only women who report a completed rape, yet other forms of SV are common and are therefore important to include. However, this may reduce generalizability to results from other studies that focused specifically on method of coercion used in completed rape. Second, we successfully followed a large number of newly matriculated females over their 1st year of college, with frequent points of assessment which provided more stable means of the targeted outcomes. Third, we incorporated and combined data from two empirically supported measures of SV to define our groups and to track these

women prospectively over the course of their 1st year of college. However, we were unable to examine the precise timing and frequency of SVs and thus could not isolate the unique influence of recent versus more distal victimizations on outcomes of interest. The Force SV group reported higher levels of childhood SV, we cannot rule out the possibility that the differences we observed between the Force SV and Incap SV groups could be attributed to differences in timing of the SV (e.g., childhood/early adolescence vs. later adolescence/emerging adulthood). We also did not assess the number of times participants had been sexually victimized. Although we did control for the effects of cumulative trauma in our models of PTSD symptoms, further controlling for the specific effects of repeated SV would have allowed for stronger conclusions to be drawn. Fourth, the measure used to examine revictimization did not assess method of coercion, and thus we were unable to examine the types of victimizations occurring in the 1st year of college. Determination of patterns of revictimization relative to method of coercion will be an interesting next step in this line of research. Next, we did not inquire about the particular substances being used prior to the reported Incap SVs; however, research in this field has demonstrated that alcohol is the main substance being reported in this form of victimization (Lawyer, Resnick, Bakanic, Burkett, & Kilpatrick, 2010). In addition, the larger study from which this sample was drawn purposefully overrecruited for trauma and PTSD symptoms, and thus results may not generalize to other typical college samples. Overall, these limitations point to multiple avenues for future research. A further revised Sexual Experiences Survey has been added to recent surveys for this ongoing project and will allow us to address and empirically test many of the above limitations. Although our samples were too small to provide accurate tests for individual differences, it is likely that several individual differences, such as ethnicity (Urquiza & Goodlin-Jones, 1994), are important influences on outcomes following SV via Force SV and Incap SV. Therefore, this is an important direction for future research. Last, an important and logical next step in future research will be to focus on the *patterns* (i.e., fluctuations or stability) of consequences (i.e., alcohol involvement, PTSD symptoms) as individuals' progress through their 1st year of college. This approach could highlight periods of relatively higher risk and subsequently enhance prevention efforts.

Conclusion

SV prior to college matriculation is associated with a multitude of deleterious outcomes during freshman year of college. Data here show that specific risk for these outcomes can vary depending on the method of coercion (i.e., force vs. incapacitation) that was used in the assault. Early identification and intervention will be important to provide support for these incoming students. In addition, findings here suggest that intervention programs may benefit from assessing the method of coercion used in sexual assault to stem the potential unique impact of these events. Together, these steps may augment collegewide efforts to reduce the occurrence and impact of all forms of SV.

Acknowledgments

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by a grant from NIDA (R01 DA018993) to Dr. Jennifer Read.

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Biographies

Melissa J. Griffin received her BSc in 2002 from McGill University in Montreal, Canada. She then moved to Vancouver, British Columbia, where she worked as a research coordinator in the Psychobiological Determinants of Health Lab from 2003 to 2007. During that time, she received her first publication examining psychobiological processes in children with asthma. She started her clinical psychology training at SUNY Buffalo in 2007, where she is currently working in the Alcohol Research Lab under the mentorship of Dr. Jennifer Read. Her research focus is risks and outcomes associated with sexual victimization. Specifically, she is interested in examining how substance use and sexual victimization are related and how each confers risk for the other. She has completed two

projects examining these associations, has received her MA and is developing a risk-reduction program for her dissertation project.

Jennifer P. Read received her PhD from Rhode Island University and subsequently held a postdoctoral position at Brown University. She is interested in the etiology of and intervention for problematic alcohol and other substance use in young adults. Most recent work has focused around two interests: (a) psychosocial determinants of young adult alcohol use and (b) co-occurrence of posttraumatic stress symptomatology and substance use. Her research on young adult drinking has examined both environmental and individual determinants of alcohol use using laboratory and survey approaches. In particular, her research examines how individual-level factors such as gender, affective state, and alcohol cognitions (e.g., expectancies, motives) may account for differential responses to the social environment. She and her colleagues recently have completed two NIAAA-funded laboratory studies of associations among mood, alcohol expectancies, and drinking. She currently is the principal investigator of a NIDA-funded longitudinal examination of associations among trauma, posttraumatic stress symptoms, and substance use in college students.

Table 1**Revised-Sexual Experiences Survey (Testa, VanZile-Tamsen, Livingston, & Koss, 2004)**

The following questions concern experiences that you may have had at some point in your lifetime. For each item, please indicate whether this happened to you. Please remember that your name is not on your survey, and your identity will not be linked to your responses.

Has anyone overwhelmed you with arguments about sex or continual pressure for sex in order to ...		
1. fondle, kiss, or touch you sexually when you indicated that you didn't want to?	No	Yes
2. try to have sexual intercourse with you (but it did not happen) when you indicated that you didn't want to?	No	Yes
3. succeed in making you have sexual intercourse when you indicated that you didn't want to?	No	Yes
4. make you have oral or anal sex or penetrate you with a finger or objects when you indicated that you didn't want to?	No	Yes
Has anyone threatened to physically harm you or used physical force (such as holding you down) in order to ...		
5. fondle, kiss, or touch you sexually when you indicated that you didn't want to?	No	Yes
6. try to have sexual intercourse with you (but it did not happen) when you indicated that you didn't want to?	No	Yes
7. succeed in making you have sexual intercourse when you indicated that you didn't want to?	No	Yes
8. make you have oral or anal sex or penetrate you with a finger or objects when you indicated that you didn't want to?	No	Yes
When you were incapacitated (e.g., by drugs or alcohol) and unable to object or consent has anyone ever ...		
9. fondled, kissed, or touched you sexually?	No	Yes
10. tried to have sexual intercourse with you (but it did not happen)?	No	Yes
11. made you have sexual intercourse?	No	Yes
12. made you have oral or anal sex or penetrate you with a finger or objects?	No	Yes

Table 2

Means at Baseline Analyses by SV Type

Variable	Force SV	Incap SV	<i>t</i>	<i>p</i>
	<i>M (SD)</i>	<i>M (SD)</i>		
Alcohol use (Quantity × Frequency)	2.6 (4.7)	13.6 (9.1)	−10.1	<.01
Binge drinking	0.24 (0.68)	1.3 (1.27)	−7.1	<.01
Alcohol consequences	3.2 (5.1)	10.8 (8.7)	−6.8	<.01
PTSD symptoms	45.3 (13.6)	37.6 (12.6)	3.4	<.01
Traumatic events (Crit A)	5.4 (2.7)	3.1 (2.0)	5.4	<.01
High school GPA	3.6 (0.36)	3.6 (0.36)	−0.31	.76

Note: SV = sexual victimization; PTSD = posttraumatic stress disorder; GPA = grade point average.

Table 3

Regression Analyses for Outcomes by SV Type Variable

Variable	B	SE(B)	β	t	p	R ²
Alcohol use						.66
Force SV	-0.85	0.62	-.03	-1.37	.17	
Incap SV	0.66	0.50	.04	1.31	.19	
Binge						.59
Force SV	-0.18	0.08	-.06	-2.18	<.05	
Incap SV	0.23	0.07	.10	3.47	<.01	
Alcohol consequences						.59
Force SV	-0.004	0.50	.01	-0.01	.99	
Incap SV	1.34	0.41	.10	3.27	<.01	
PTSD symptoms						.43
Force SV	2.37	1.27	.06	1.87	.06	
Incap SV	1.19	0.89	.04	1.34	.18	
PTSD symptoms—Crit A						.44
Force SV	1.39	1.34	.04	1.04	.30	
Incap SV	0.91	0.90	.03	1.02	.31	
Crit A count	0.42	0.18	.09	2.27	<.05	
Revictimization						.04
Force SV	0.06	0.01	.19	4.46	<.01	
Incap SV	0.02	0.01	.07	1.79	.07	
GPA						.16
Force SV	0.18	0.25	.03	0.71	.48	
Incap SV	0.24	0.20	.05	1.22	.22	

Note: SV = sexual victimization; PTSD = posttraumatic stress disorder; GPA = grade point average.