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Is Heavy Drinking Really Associated With Attrition From College? The Alcohol–Attrition Paradox

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Abstract

Student attrition at colleges across the United States poses a significant problem for students and families, higher educational institutions, and the nation's workforce competing in the global economy. Heavy drinking is a highly plausible contributor to the problem. However, there is little evidence that it is a reliable predictor of attrition. Notably, few studies take into account indicators of collegiate engagement that are associated with both heavy drinking and persistence in college. Event-history analysis was used to estimate the effect of heavy drinking on attrition among 3,290 undergraduates at a large midwestern university during a 4-year period, and student attendance at a number of college events was included as covariates. Results showed that heavy drinking did not predict attrition bivariately or after controlling for precollege predictors of academic success. However, after controlling for event attendance (an important indicator of collegiate engagement), heavy drinking was found to predict attrition. These findings underscore the importance of the college context in showing that heavy drinking does in fact predict attrition and in considering future intervention efforts to decrease attrition and also heavy drinking.

Keywords

college attrition; heavy drinking; suppression; event-history

College attrition is prevalent and is also quite problematic, both for individuals who attempt college and subsequently leave without a degree and for society overall. For example, 19.5% of the U.S. population (25 years and older) attempted college but did not obtain a degree (U.S. Census Bureau, 2006a). These individuals earn far less than do college graduates ($31,936 as opposed to $45,221; U.S. Census Bureau, 2006b) yet would still be responsible for any loans made toward failed college attempts (Horn, Berger, & Carroll, 2004). Thus, attrition is financially disadvantageous for individuals (Horn et al., 2004). The disadvantages of attrition extend to the nation and to society-at-large, which subsidizes education for the purpose of promoting degree attainment (Cunningham & Carroll, 2005) and subsequent economic growth and national progress.

Thus, identifying risk factors for attrition is important for developing interventions to decrease attrition rates. Heavy drinking is one such possible risk factor. First, it is highly prevalent in college-age youths (Johnston, O'Malley, Bachman, & Schulenberg, 2005). Second, it predicts

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injury, assault, property damage, and mortality (Hingson, Heeren, Winter, & Wechsler, 2005; Jackson, Sher, & Park, 2005; Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism [TFNACAAA], 2002) and thus is a public health concern in its own right. It is also associated with deficits in long-term neurocognitive functioning, which could affect academic performance and later vocational success (Zeigler et al., 2005). Thus, it is not surprising that a nationally representative sample of college administrators reported believing that alcohol (specifically) was involved in 21% of all cases of student attrition (Gadaleto & Anderson, 1986). Furthermore, a nationally representative sample of students rated alcohol use as one of the top 10 impediments to students' academic performance (American College Health Association, 2006).

However, large-scale and well-controlled studies have shown little empirical support for the effect of heavy drinking (or substance abuse) on attrition from college. For example, among 5,877 respondents from the National Comorbidity Survey, there was no statistically significant relation between prior substance use disorders and eventual failure to complete college (Kessler, Foster, Saunders, & Stang, 1995). P. K. Wood, Sher, Erickson, and DeBord (1997) found a seemingly strong association ($r = .32$, $p < .05$) between a composite variable of alcohol involvement during the freshman year (which included questions asking past-month frequency of drinking five or more drinks in a sitting) and a composite variable of academic problems (including an assessment of whether or not students failed to complete their degree after 6 years) in a prospective study of college students. However, this relation was attenuated to nonsignificance when gender, parent education, academic aptitude, and high school class rank were controlled. Additionally, findings from this sample were replicated with measures of alcohol involvement across college (M. D. Wood, Sher, & McGowan, 2000).

It may stand to reason that heavy drinking has this tenuous predictive effect on attrition from college simply because, for many students, much of what defines college life and society largely incorporates heavy drinking (Schulenberg & Maggs, 2002). More specifically, many events and environmental contexts are available to students to attend while they are in college, such as Greek parties, intercollegiate sports events, and residence hall parties, all of which are arguably part of the college experience. Thus, attending such events reflects active engagement in the college environment, which theoretically increases the likelihood of persisting in college given the strong relation between engagement (i.e., becoming integrated in a college institution) and persistence (Braxton, Hirschy, & McClendon, 2004; French & Oakes, 2004; Pascarella & Terenzini, 1980; Tinto, 1993). However, this type of engagement is also strongly associated with heavy drinking (Neal, Sugarman, Hustad, Caska, & Carey, 2005; Wechsler, Kuo, Lee, & Dowdall, 2000). Consequently, without considering student attendance at drinking-related college contexts, it is impossible to differentiate context-normed heavy drinking in college from context-excessive heavy drinking, the latter possibly being a risk factor for attrition from college.

Thus, we might expect attendance at various collegiate events to predict persistence in college, yet also to be related to heavy drinking. Together, these two conceptually contradictory relations would obscure the association between heavy drinking and attrition, if event attendance were not included in predictive models of attrition. That is, if event attendance is included, unique effects of drinking beyond what is expected (based on event attendance) can be modeled. In this case, the unique drinking effect can be viewed as context-excessive; therefore, heavy drinking, controlling for this attendance or engagement, should relate to attrition. This increase in the predictive ability of heavy drinking on attrition, when including additional variables such as event attendance, is known statistically as suppression (Conger, 1974; MacKinnon, Krull, & Lockwood, 2000). An illustration of this effect is shown in Figure 1, in which, due to the relation between heavy drinking and event attendance, heavy drinking becomes predictive of attrition when event attendance is included in a predictive model of

attrition. The existence of suppression in this situation would demonstrate that the bivariate association between heavy drinking and attrition is uncertain and, in fact, depends upon the relative amounts of engagement or event attendance, drinking, and the correlation between them.

Method

Participants

In 2002, a sample of 3,720 first-time undergraduate students (88% of the entering class) completed a paper-and-pencil survey the summer prior to college entry, following approval from the university's institutional review board. At each successive semester for the next 4 years, participants completed an online survey. For the summer survey prior to college entry, the sample was 53.6% female, 90.3% White/non-Hispanic, and an average of 17.96 (*SD* = 0.37) years of age. Of this sample, 90.0% participated in two or more assessment waves.

Retention biases were minimal and reported in other work (Sher & Rutledge, 2007), but it should be noted that retained participants were more likely to be female (odds ratio [OR] = 2.33) and had higher combined college entrance exam scores and high school class rank scores (OR = 1.27). Participants were excluded from analyses if they reported transferring to a different university at any time (*n* = 424) or if they never fully matriculated at the university (*n* = 6); thus, a total of 3,290 participants were ascertained for these analyses.

Measures

Attrition (nonenrollment)—This was the dependent measure. Nonenrollment data were provided by the university registrar; as such, there was no missing information with regard to this variable. Nonenrollment was dichotomously assessed each semester (0 = *Enrolled;* 1 = *Non-enrolled*).

Time—Students' enrollment status was assessed each semester over 4 years for a total of eight measurement occasions. Time was used as a covariate in these analyses and measured with four different parameters to account for the nonlinear, cyclic effects found in attrition research (DesJardins, Ahlburg, & McCall, 1999, 2002). Namely, time effects included (1) a linear variable that ranged in value from −2 to 5, therefore fixing the zero point at the time when students traditionally are most likely to leave college, namely just after the first year (Daugherty & Lane, 1999); (2) a dummy variable comparing the first year with all other years (*Freshman Fall and Freshman Spring* = 1; *All other semesters* = 0); (3) a dummy variable comparing fall semesters with spring semesters (*Fall semesters* = 0; *Spring semesters* = 1); and (4) an interaction term between the two aforementioned dummy variables to demonstrate that the time of highest observed nonenrollment rates often occurs at the fall semester just after the first year (Daugherty & Lane, 1999; DesJardins et al., 1999, 2002).

Event attendance—Students' past-month attendance at eight various types of events was dichotomously recorded each semester via a Web-based survey (Sher & Rutledge, 2007). Students could report that they did or did not attend these events each semester: Gathering of faculty with students, residence hall social event or party, fraternity or sorority event or party, on-campus dance or concert, party at off-campus housing, party or event at another campus, off-campus bar or club, and intercollegiate sports event (0 = *Did not attend;* 1 = *Attended*).

Heavy drinking—Heavy drinking was assessed each semester with a Web-based survey (Sher & Rutledge, 2007). It was a composite of three 9-point ordinal scales asking the number of occasions per week in the past month that students drank five or more drinks in a sitting, felt high, and got drunk on alcohol (α = .92 to .95 at all time points; 0 = *Did not in the past 30*

days; 1 = *Once in the past 30 days;* 2 = *2–3 times in the past 30 days;* 3 = *Once or twice a week;* 4 = *3–4 times a week;* 5 = *5–6 times a week;* 6 = *Nearly every day;* 7 = *Every day;* 8 = *Twice a day or more*). Prior to becoming a composite, means for all variables across all time points ranged from 1.26 (*SD* = 1.33) to 1.81 (*SD* = 1.39).[1]

Additional control variables—A number of additional control variables were included as covariates in the main analyses. Gender, race, and precollege heavy drinking were selected due to their known relation with heavy drinking in college (Wechsler, Dowdall, Davenport, & Castillo, 1995). Furthermore, parental education, college entrance exam scores, and high school class rank were selected due to their known relation with college retention (DesJardins et al., 1999, 2002; Warburton, Bugarin, Nuñez, & Carroll, 2001).

Gender was dummy-coded (0 = *Female;* 1 = *Male*), as was race (0 = *White/Non-Hispanic;* 1 = *Non-White*). The parental education variable was also dummy-coded and provided by the university registrar; it indicated whether or not either of a student's parents had a college degree prior to the student's 18th birthday (0 = *Non-first-generation college student;* 1 = *First-generation college student*). College entrance exam (ACT) scores and high school class rank were also provided by the registrar; high school class rank was scaled as percentile rank. Precollege heavy drinking was assessed prior to college entry and was measured with the same wording and scale as the heavy drinking variable.

Data Analyses

In order to estimate models of the effect of covariates on attrition, we used discrete-time event-history analysis, a modeling technique that is similar to logistic regression and is specifically applicable to analyses of longitudinal and time-varying data (Allison, 1982, 1984; Yamaguchi, 1991). Enrollment status was recorded for individuals at each time point; units were therefore in person-semester units. When a person became nonenrolled after previously being enrolled, his or her subsequent enrollment data was not included in the analyses, as is the protocol for this type of event-history analysis, which predicts first-time nonenrollment only (Allison, 1982, 1984; Yamaguchi, 1991).[2] The four time covariates described earlier were entered as the first covariates in all models.

Results

College attrition was quite prevalent; across the 4 years, 28.1% of the students were not enrolled for at least a semester, perhaps indefinitely prolonging their time to degree completion. The modal time for first nonenrollment was after completing the first year, as shown by hazard rates presented in Figure 2.

Students attended many types of events throughout college, as shown by attendance rates in Table 1. Attendance rates for many events decreased over time, as students perhaps started moving out of residence halls and off campus. Exceptions to this decrease are bar/club attendance, which increased over time (perhaps as students came of legal drinking age), and

[1]This composite assesses not only an objective measure of frequency of heavy alcohol consumption, but also the subjective effects of alcohol consumption, serving as a correction for biases as a result of individual differences in body weight, food consumed prior to drinking, individual metabolism, and pharmacodynamics (Jackson, Sher, Gotham, & Wood, 2001).

[2]Individuals who, at some point, reenrolled following their first spell of nonenrollment (i.e., “stop-outs”; *n* = 185) were not excluded from the analyses; rather, the first spell of nonenrollment was the main outcome variable. This number of individuals who reenrolled is consistent with national estimates of reenrollment (Horn & Carroll, 1998). However, analyses for complex patterns of enrollment (for which individuals may leave, reenter, and leave college at altogether different times and for different reasons in comparison to others) and possible factors associated with reentry into college are beyond the scope of this study (DesJardins et al., 1999; Yamaguchi, 1991). Analysis of first-time nonenrollment is considered to be the first logical step in longitudinal studies of risk factors of attrition (DesJardins et al., 1999).

intercollegiate sports attendance, which showed a seasonal attendance pattern. Of note, all within-semester combinations of types of event attendance were positively associated with one another, and these within-semester interrelations remained consistent across semesters, overall range of ORs = 1.39 (95% confidence interval [CI] = 1.15−1.69) to 20.61 (95% CI = 14.72 −28.85), where the median OR was 4.06. The types of event attendance that were least associated with one another were attendance at residence hall parties and at off-campus housing parties (median OR = 1.78 across all semesters), attendance at residence hall parties and bar/club attendance (median OR = 1.96 across all semesters), and attendance at faculty–student gatherings and bar/club attendance (median OR = 2.00 across all semesters). The types of event attendance that were most associated with one another were attendance at faculty–student gatherings and residence hall parties (median OR = 7.04 across all semesters), attendance at parties at off-campus housing and at other campuses (median OR = 7.18 across all semesters), and attendance at residence hall parties and on-campus dances/concerts (median OR = 11.51 across all semesters).

As hypothesized, though, attendance of events was associated with heavy drinking in college, as shown in Table 2. Of note, attendance at Greek parties, parties at off-campus residences, parties at other campuses, and bars and clubs was associated with heavy drinking throughout college. The relation between heavy drinking and sports event attendance showed a seasonal pattern (specifically, the relation occurred mainly in fall semesters). Conversely, attending faculty–student gatherings, residence hall parties, and on-campus dances and concerts was associated with less heavy drinking early in college, though these effects were no longer significant later in college, as students perhaps came of age and/or moved off campus.

With regard to the hypotheses on attrition, the event-history models shown in Table 3 show that determining the relation of event attendance to heavy drinking was a crucial aspect of later determining whether or not heavy drinking was related to attrition. Specifically, heavy drinking itself did not predict attrition, nor did it predict attrition with the inclusion of the control variables often used in higher education research to control for academic factors related to attrition. However, with the inclusion of the event attendance variables, heavy drinking became predictive of attrition, such that heavier drinking was associated with leaving college. Again, this suppression occurred because heavy drinking has important relations with event attendance, as shown in Figure 1 (the statistical background behind such a model is best described in Conger, 1974, and MacKinnon et al., 2000). Accounting, or controlling, for that relation allows us to determine the relation of heavy drinking in excess of the typical level of heavy drinking that is related with event attendance.

Of note, some of the event attendance variables followed the pattern described in Figure 1: Attendance of Greek parties, sports events, and parties at off-campus housing was related with higher levels of heavy drinking yet also retention in college.[3] However, attendance at residence hall parties showed a legitimate suppression effect, with algebraic signs opposite to that shown in Figure 1; that is, students who attended residence hall parties drank less heavily but were also more likely to leave college. Furthermore, attendance at bars and clubs predicted heavy drinking, as well as attrition. The fact that the potential suppressor variables that were studied follow different paths indicates that there may be multiple underlying mechanisms relating to college experience, engagement, heavy drinking, and attrition.

[3]Because Greek membership has sometimes been associated with college retention (Astin, 1975; Pascarella, Flowers, & Whitt, 2001), we reestimated nonenrollment while including a dichotomous measure of Greek membership, assessed each semester. Greek membership was highly correlated with attendance at Greek parties (ORs = 12.82 [95% CI = 10.08−16.32] to 51.34 [95% CI = 32.75−80.46] across all time points). Greek membership indeed negatively predicted attrition (OR = 0.64; 95% CI = 0.43−0.95), and its inclusion did not alter the suppression effect; heavy drinking continued to predict attrition in this model (OR = 1.21; 95% CI = 1.02−1.44).

Discussion

The lack of empirical support for the effect of heavy drinking on attrition from college has seemingly contradicted knowledge about the overall negative public health impact of heavy drinking on both role functioning and cognitive functioning (TFNACAAA, 2002; Zeigler et al., 2005) and was strongly inconsistent with the perceptions of administrators who must deal with the dual issues of attrition and underage drinking as major challenges (Braxton et al., 2004; Gadaleto & Anderson, 1986; Wechsler, Kelley, Weitzman, San Giovanni, & Seibring, 2000). Our analyses provide some resolution to this contradiction and seeming inconsistency. If we control for highly alcohol-prominent college contexts, a negative association between heavy drinking and retention is unmasked.

Not only did we demonstrate that heavy drinking does, in fact, relate to attrition, but we also demonstrated that different types of event attendance are related to heavy drinking and to attrition in different ways. These findings have direct relevance to intervention efforts. For example, college drinking interventions often target social norms and students' motivations to drink (Licciardone, 2003; Sullivan & Risler, 2002; Vicary & Karshin, 2002). However, such interventions do not necessarily target important social functions that serve as contexts for drinking and as important settings for fostering collegiate engagement (DeJong & Langford, 2002).[4] Development of context-sensitive drinking interventions that simultaneously target excess drinking and promote student social engagement might help to enhance the ecological validity and, consequently, the effectiveness of campus-based interventions on heavy drinking. It is a reasonable hypothesis that the attention to promoting engagement in these interventions should have the added benefit of preventing attrition (because students' social engagement and integration within the college atmosphere are foci of successful interventions to improve retention; Braxton et al., 2004; Sullivan & Risler, 2002; Thompson, 2007).

This study perhaps raises more questions than provides answers. For example, a great number of possible additional individual-level variables, such as personality or motivations for attending college, might contribute to or interact with event attendance, heavy drinking, and/or attrition and will require further theory and study.[5] Moreover, the suppression findings indicated that, beyond normal college-context heavy drinking, individuals' heavy drinking predicts attrition; however, whether such drinking is either itself diagnostically pathological or relates to other psychopathology that would predict attrition has not yet been fully answered (Sher, Wood, & Gotham, 1996). In addition, as this study linked event attendance, heavy drinking, and attrition, it would be of interest to know why individuals elect to attend certain events versus others and how this might relate to heavy drinking and attrition. Furthermore, none of the control indicators of academic performance (e.g., ACT scores) significantly predicted attrition when heavy drinking was controlled. This could indicate the added importance of heavy drinking as some type of mediating factor of attrition, or it could indicate other noteworthy relations between heavy drinking and academic performance that require further theory and investigation.

[4]We note, however, that some interventions do (a) target settings that are important contexts for heavy drinking and engagement (e.g., fraternity parties; Fournier, Ehrhart, Glindemann, & Geller, 2004) or (b) promote alcohol-free social contexts that are designed to foster collegiate engagement (e.g., "mocktail" parties; Neighbors et al., 2007).

[5]In an exploratory analysis, we reestimated the models with additional variables, including first-semester personality traits, defined as raw scores from the NEO Five-Factor Inventory of personality (NEO-FFI; Costa & McCrae, 1992) and precollege self-reports of reasons for attending college (measured on a 5-point Likert scale ranging from 0 = *Not at all important* to 4 = *Very important*), which included: to get a satisfying job, increase earning potential, have fun, broaden perspectives, learn, gain self-confidence, gain interpersonal skills, get away from home, meet a boyfriend/girlfriend, and find a spouse. These factors did not alter the effect of the event attendance variables as suppressors, as heavy drinking continued to predict attrition within this new model (OR = 1.24; 95% CI = 1.03−1.50); nor did these factors alone act as suppressors. However, the importance and predictive potential of these factors should not be discredited on the basis of these preliminary analyses.

Also, two limitations of this study may ultimately inform future directions. First, this study did not examine complex enrollment patterns, which would be a proper next step for related studies. That is, it is not uncommon for individuals to have sporadic patterns of enrollment and nonenrollment over prolonged periods of time (Horn et al., 2004; Horn & Carroll, 1998), and modeling time to first nonenrollment is not isomorphic with failure to attain a degree. Second, the current sample comes from a single, large, public, research-extensive midwestern university with a large Greek system and intercollegiate athletic programs. It is possible that rates and nature of event attendance, heavy drinking, and attrition are somewhat different at universities that do not share similar characteristics (e.g., small, private, academically elite colleges; women's colleges; performing arts colleges). Therefore, caution should be taken with regard to generalizing the findings to schools with different demographic and extracurricular profiles.

Nevertheless, attrition remains a large problem for which there are no single or simple solutions. Thus, future individual-level and institutional-level studies should apply these general findings toward pursuits aimed at understanding the mechanisms that underlie how heavy drinking and event attendance, or engagement, within an institution might contribute to attrition. Our findings highlight the critical nature of context for understanding possible alcohol-related consequences and argue for considering the ecology of drinking when seeking to understand its sequelae.

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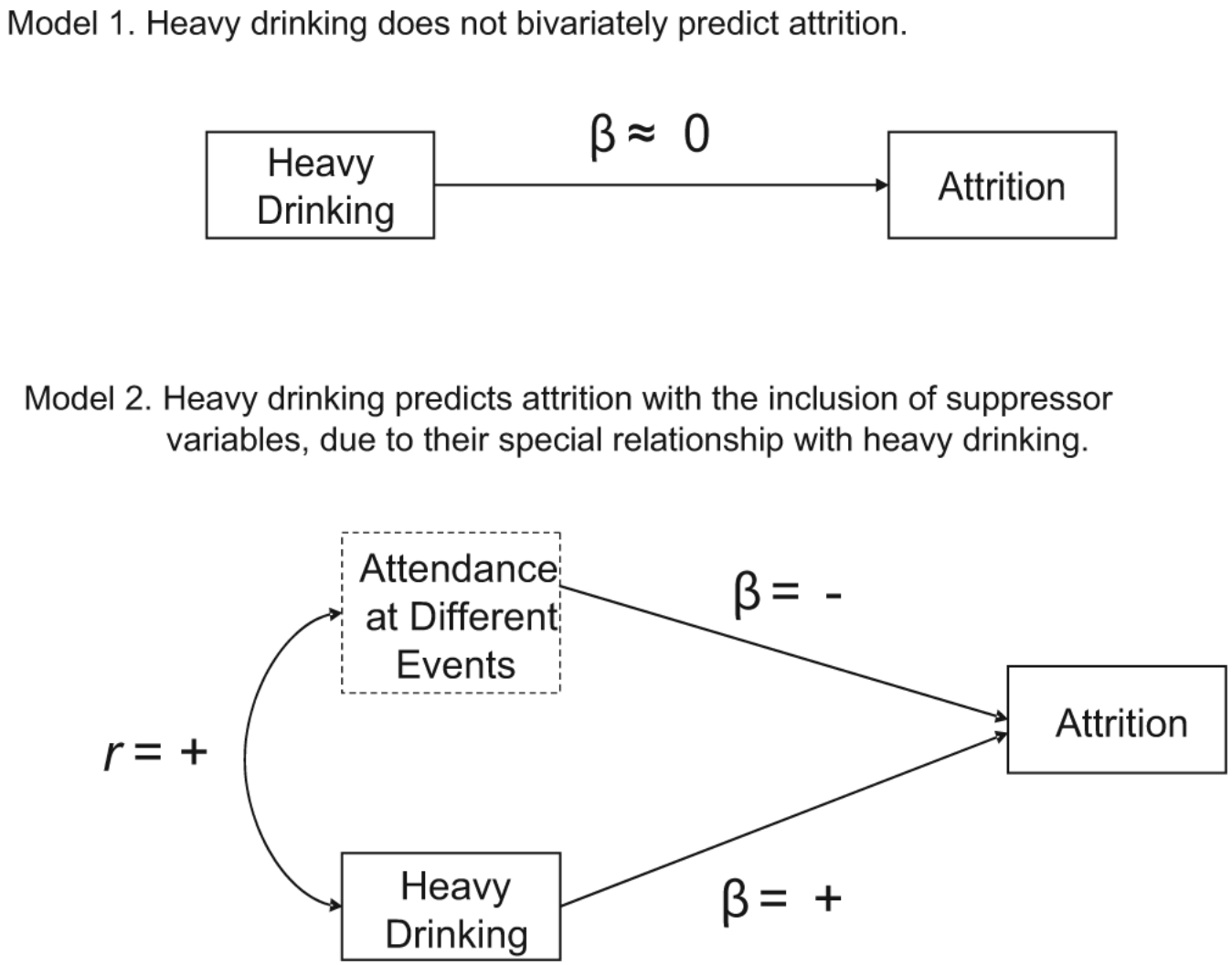

Figure 1.
Heavy drinking can predict attrition with the correct suppressor variables.

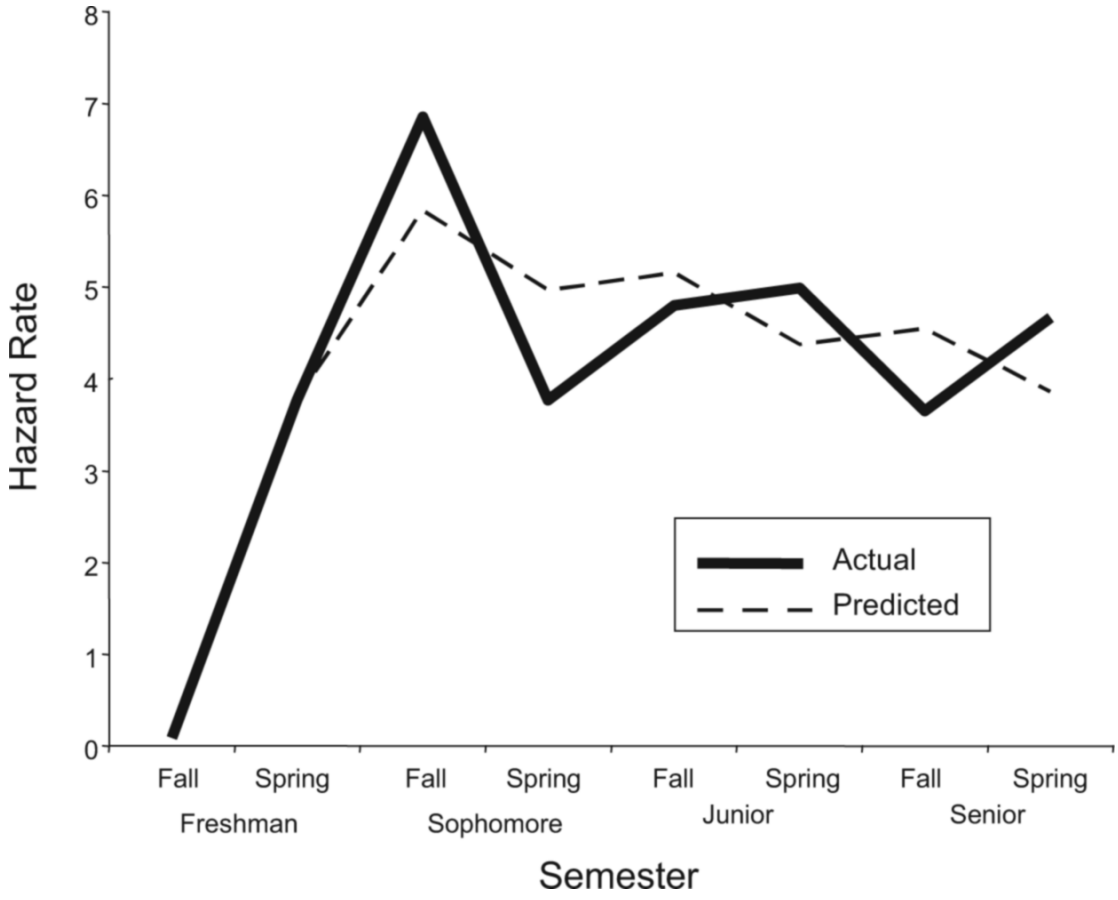

Figure 2.
Hazard rates of first nonenrollment in college.

Table 1

Event Attendance Each Semester (in Percentages)

	Freshman year (*n* = 2,172–2,238)		Sophomore year (*n* = 1,959–2,121)		Junior year (*n* = 2,015–2,045)		Senior year (*n* = 1,871–2,021)	
Event	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
Faculty–student gatherings	45	38	38	39	38	37	39	39
Residence hall parties	61	49	34	31	19	16	13	11
Greek parties	64	61	56	53	48	39	36	29
On-campus dances/concerts	40	33	33	30	25	23	20	18
Parties at off-campus housing	81	75	84	79	84	77	76	66
Parties at another campus	45	46	42	40	36	34	33	26
Off-campus bars/clubs	68	62	61	61	69	81	87	85
Intercollegiate sports events	64	46	60	39	58	31	52	25

Table 2

Odds of Event Attendance Relative to Concurrent Heavy Drinking (in Odds Ratios)

	Freshman year (*n* = 2,163 −2,231)		Sophomore year (*n* = 1,947 −2,106)		Junior year (*n* = 1,996−2,022)		Senior year (*n* = 1,860−2,011)	
Event	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
Faculty–student gatherings	0.96	0.93*	0.91*	0.93*	0.95	0.95	0.98	0.98
Residence hall parties	0.85**	0.81**	0.70**	0.80**	0.85**	0.87**	0.97	0.99
Greek parties	1.76**	1.82**	1.60**	1.70**	1.59**	1.50**	1.54**	1.48**
On-campus dances/concerts	0.90**	0.91*	0.89**	1.00	0.94	1.01	1.04	1.06
Parties at off-campus housing	2.78**	2.13**	2.40**	2.13**	1.98**	1.53**	1.75**	1.72**
Parties at another campus	1.20**	1.36**	1.28**	1.28**	1.33**	1.35**	1.33**	1.38**
Off-campus bars/clubs	1.80**	1.90**	1.87**	1.97**	2.14**	2.26**	3.88**	3.87**
Intercollegiate sports events	1.11**	0.97	1.21**	1.04	1.41**	1.05	1.40**	1.15**

Note. Heavy drinking (composite): 0 = *Did not in the past 30 days;* 1 = *Once in the past 30 days;* 2 = *2–3 times in the past 30 days;* 3 = *Once or twice a week;* 4 = *3–4 times a week;* 5 = *5–6 times a week;* 6 = *Nearly every day;* 7 = *Every day;* 8 = *Twice a day or more*. Event attendance: 0 = *Did not attend in past 30 days;* 1 = *Attended in past 30 days.*

* $p < .05$.

** $p < .01$.

Table 3

Event-History Models of the Effect of Heavy Drinking on First Nonenrollment (in Odds Ratios)

Variable	Bivariate	Control variables	Control and event attendance variables
Heavy drinking	1.03	1.06	1.23*
Control			
Gender		0.75	0.86
Race		0.80	0.89
ACT scores		1.04	1.02
High school class rank		0.99	1.00
Parental education		0.81	0.76
Precollege heavy drinking		0.96	0.97
Event attendance			
Faculty–student gatherings			0.52**
Residence hall parties			2.44**
Greek parties			0.27**
On-campus dances/concerts			1.15
Parties at off-campus housing			0.40**
Parties at another campus			0.94
Off-campus bars/clubs			2.23**
Intercollegiate sports events			0.61*
Likelihood ratio chi-square (*df*)	68.03** (5)	74.83** (11)	175.45** (19)

Note. Units are in person-semesters where *n* (person-semesters) = 14,741. Four time parameters are covariates in all models. Nonenrollment: 0 = *Enrolled;* 1 = *Nonenrolled*. Heavy drinking (composite): 0 = *Did not in the past 30 days;* 1 = *Once in the past 30 days;* 2 = *2–3 times in the past 30 days;* 3 = *Once or twice a week;* 4 = *3–4 times a week;* 5 = *5–6 times a week;* 6 = *Nearly every day;* 7 = *Every day;* 8 = *Twice a day or more*. Gender: 0 = *Female;* 1 = *Male*. Race: 0 = *White/Non-Hispanic;* 1 = *Non-White*. Parental education: 0 = *Non-first-generation college student;* 1 = *First-generation college student*. Event attendance: 0 = *Did not attend in past 30 days;* 1 = *Attended in past 30 days*.

* $p < .05$.

** $p < .01$.