Female College Drinking and the Social Learning Theory: An Examination of the Developmental Transition Period from High School to College

Joseph W. LaBrie, **Karie Huchting**, **Eric R. Pedersen**, **Justin F. Hummer**, **Kristin Shelesky**, and **Summer Tawalbeh**

Joseph W. LaBrie is Assistant Professor of Psychology and Director of Heads UP; Karie Huchting is Assistant Director of Heads UP; Eric R. Pedersen is Assistant Director of Heads UP; Justin F. Hummer is Project Coordinator at Heads UP; Kristin Shelesky is Staff Psychologist at Student Psychological Services; and Summer Tawalbeh is Programming Coordinator at Heads UP; all at Loyola Marymount University

Abstract

Problematic drinking among college students remains a national issue with large percentages of college students reporting heavy episodic or binge drinking (Wechsler, Dowdall, Davenport, & Castillo, 1995) and experiencing severe alcohol-related consequences ranging from poor academic performance, to sexual assault, vandalism, and even death (Hingson, Heeren, Winter, & Wechsler, 2005; Wechsler et al., 2002). According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2002), the first 6 weeks on a college campus are critical to first-year student success. However, during these first weeks many students initiate heavy drinking that may interfere with their ability to adapt to campus life, and patterns of drinking established during these first weeks persist throughout college (Schulenberg et al., 2001). Approximately one third of first-year students fail to enroll for their second year due to difficulties with the transition to college (Upcraft, 1995). Drinking may compromise successful negotiation of the transition into college and therefore jeopardize overall collegiate success. Therefore, the ability to identify specific students as they enter college who may develop problematic drinking patterns and related negative consequences would allow student affairs personnel to more effectively design and target risk-reduction programs and interventions.

Drinking During the Transition to College

The transition to college from high school presents a range of academic, social, and developmental challenges and has been characterized as a "developmental disturbance" whereby young adults must navigate several tasks, often without high school support networks (Schulenberg et al., 2001). Heavy drinking, alcohol-related problems, and risky or illegal behaviors peak during late adolescence and early adulthood (Baer & Carney, 1993). Ongoing problematic behaviors, including substance abuse and binge drinking, may reflect difficulties with the transition and indicate inadequate coping with developmental tasks

Correspondence concerning this article should be addressed to Joseph LaBrie, Department of Psychology, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045; jlabrie@lmu.edu.

(Hurrelmann, 1990). Alcohol may play a paradoxical role during this transition. Despite the possibility for serious harm from heavy drinking, drinking also may serve important constructive functions such as making friends, demonstrating a more mature status, or exploring personal identities (e.g., Chassin, Presson, & Sherman, 1989; Jessor, 1987; Silbereisen & Eyferth, 1986).

Female College Students

Drinking may be of particular concern for female students. Recent evidence suggests that female college students are drinking at levels relatively comparable to their male peers, with binge drinking rates approaching those of college men (e.g., O'Malley & Johnston, 2002; Wechsler et al., 2002; Young, Morales, McCabe, Boyd, & D'Arcy, 2005). For example, rates of frequent binge drinking among college women have increased significantly in the past decade, and nearly 40% of college women report binge drinking and 20% report binge drinking three or more times in the previous 2 weeks (Wechsler et al., 2002). These statistics interact with physiological gender differences to put women at greater risk than men at comparable levels of drinking. These differences include body size, enzyme levels, and fluctuating hormones, which contribute to women becoming intoxicated more quickly than men at similar consumption levels and lower BAC levels (Jones & Jones, 1976; NIAAA, 1990; Perkins, 2000). Overall, smaller quantities of alcohol are needed to produce an intoxicating effect in women than in men, placing women at greater risk for negative consequences, including alcohol poisoning.

Many college women may be unaware of these differences and feel pressure to drink heavily. Findings suggest that heavy alcohol consumption among college women afforded them with positive attention from male peers but also increased vulnerability to sexual assault (Young et al., 2005). Although women often drink for similar reasons as men, including relaxing, fitting in, and decreased inhibition, women also may drink because of a desire for intimate relationships (Vince-Whitman & Cretella, 1999), even as heavy drinking places them at risk for negative sexual consequences (Hingson et al., 2005). Over 50% of all sexual assaults of college students involve alcohol use (see review by Abbey, 2002), and college women who consume alcohol are three to nine times more likely to experience sexual aggression than those who do not drink (Parks & Fals-Stewart, 2004). Further, the first year in college involves significant risk for sexual assaults (Fisher, Cullen, & Turner, 2000). Humphrey and White (2000) found that 31% of female students report experiencing some type of sexual assault during their first year at college.

Social Learning Theory

Social learning theory may be applied as a framework for examining drinking behaviors during the transition period from high school to college (e.g., Durkin, Wolfe, & Clark, 2005; Read, Wood, & Capone, 2004; Wall, Thrussell, & Lalonde, 2003). According to Bandura (1977, 1986), human behavior is learned through interaction and observation of others in a social context. Bandura (1969) posited "reciprocal determinism" as a term to describe the interactive associations among environmental and individual variables that influence behavior over time. Specifically, there is a strong correlation between socio-environmental

influences and college drinking behavior (Baer, 2002). Learning and reinforcement of drinking behaviors is thought to occur through both active (i.e., alcohol offers) and passive (i.e., social modeling, perceived normative behavior) experiences within the social environment, indicating that students learn and subsequently make decisions about drinking from their peers who model drinking behavior (Read et al.).

In fact, peers are the major means of support and guidance for most college students, exerting greater impact on behavioral decisions than biological, familial, or cultural influences (e.g., Berkowitz & Perkins, 1986; Borsari & Carey, 2001). It has been found that peer associations are by far the best predictor of binge drinking behaviors (Durkin et al., 2005). Two influential peer groups on college campuses that have been identified as at risk for negative alcohol consequences and may influence drinking across the transition into college are Greek-affiliated students and athletes (e.g., Canterbury et al, 1992; Nelson & Wechsler, 2001). Greek-affiliated students drink more heavily and more frequently than other students (e.g., Cashin, Presley, & Meilman, 1998; Engs, Diebold, & Hanson, 1996; Sher, Bartholow, & Nanda, 2001; Wechsler et al., 1995) and perceive alcohol as more acceptable than non-Greeks (Larimer, Irvine, Kilmer, & Marlatt, 1997). An incoming student who wishes to join a sorority may be influenced to drink in ways that match the Greek drinking culture. Although college athletes benefit from the presence of a support system, including coaches and professional trainers who may serve as a protective buffer and attenuate the negative consequences of excessive drinking, intercollegiate athletes have still been identified as an at-risk group for heavy alcohol consumption (e.g., Nelson & Wechsler). National studies have found that athletes consume on average more drinks per week, have more binge drinking episodes, and engage in more frequent heavy drinking than non-athletes (e.g., Leichliter, Meilman, Presley, & Cashin, 1998; Nelson & Wechsler; Wechsler, Davenport, Dowdall, Grossman, & Zanakos, 1997).

The Current Study

Although the prevalence of alcohol use and abuse among college students in general is well researched, few studies have measured the change in drinking behavior among females during the transition from high school to college (e.g., Baer, Kivlahan, & Marlatt, 1995; Duchnick, 2004). The present study examines changes in drinking behavior during the transition to college among female freshmen students and explores potential moderators associated with increased use and alcohol-related negative consequences (e.g., family income and drinking motives). Based on the tenet of reciprocal determinism from social learning theory, we hypothesize that female students who drank in high school will continue to drink in college; supporting the notion that past behavior predicts future behavior. We also hypothesize that peer groups will influence drinking behavior and, as such, athletic team membership and the intention to join a sorority are expected to moderate the relationship resulting in an increase in drinking behaviors.

METHOD

Participants

Two hundred and sixty-three freshmen female students participated in a local IRB-approved study. All participants were part of a larger intervention study at a mid-sized private Western university where all freshmen female students at the university were invited to participate in the study. Participants had a mean age of 18.00 ($SD = 0.37$) years and consisted of 136 Caucasians (52%), 39 Hispanics (15%), 29 "Mixed Ethnicity" (11%), 16 Asian Americans or Pacific Islanders (6%), 15 Black or African Americans (6%), and 28 identified as "Other" or "Declined to State" (10%). Twenty-one percent of the participants did not drink over the course of the assessment period (from pre-college to the first month of college; $n = 56$). All participants received a stipend of $40 for their participation in the study regardless of drinker status.

Design and Procedure

Prior to assessing drinking behavior, all participants completed a brief online questionnaire assessing demographic variables, alcohol-related negative consequences, alcohol expectancies, drinking motives, and health behaviors. Demographic questions included age, ethnicity, family income (choice of five options: $0–25,000; $26,000–75,000; $76,000–150,000; $151,000–300,000; and $300,000 and above), athlete status, and desire to pledge a sorority during the second semester of freshmen year. The Rutger Alcohol Problems Index (RAPI; White & Labouvie, 1989) assessed 23 alcohol-related negative consequences experienced within the past month. Reliability statistics for this scale revealed an alpha level of .88 in the current sample. The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) assessed problematic drinking behavior including 10 items on the amount and frequency of drinking, problems resulting from use, and alcohol dependence symptoms, scored on a scale from 0 to 40. These items were summed together to form a composite of a participant's problematic drinking behavior, such that a score of 8 indicates a strong likelihood of hazardous or harmful alcohol consumption. Reliability of the AUDIT was adequate ($\alpha = .83$), and the range was 0 to 21 for the current sample. Finally, the Drinking Motives Questionnaire (DMQ; Cooper, 1994) assessed four subscales of drinking motives: Enhancement, Social, Coping, and Conformity. Overall, the DMQ showed adequate reliability in the sample ($\alpha = .95$).

In groups of 8 to 10 female freshmen, at the end of the first month of their initial semester, participants individually completed a 3-month timeline followback (TLFB; Sobell & Sobell, 1992), which assessed alcohol use over the previous 3 months. This group setting for the TLFB assessment has recently been found to be as reliable and valid as the individual setting format (e.g., LaBrie, Pedersen, & Earleywine, 2005; Pedersen & LaBrie, 2006). Participants received a calendar of the previous 3 months that highlighted important academic and national holidays, as well as important campus-specific dates. In order to assist memory, participants identified other personal "marker" days, such as vacations, sporting events, visitors, parties, and birthdays that were relevant to them. Next, participants went back through the calendar day by day for the 3 months and indicated drinking events, using marker dates and their established drinking patterns as memory aids. For each day,

participants marked whether they had consumed alcohol or not and, if drinking occurred, they noted the number of standard drinks (defined for participants as 12 oz. of beer, 4 oz. of wine, or a 1.25 oz. shot of liquor) they consumed that day. This method of retrospective recall has been found to be reliable and valid with college students (Sobell, Sobell, Klajner, Pavan, & Basian, 1986). The last month of the TLFB indicated drinking behaviors during the first month of college, whereas the first month indicated drinking behaviors during the last month in high school. Variables assessed included total drinks per month, drinking days per month, average drinks per occasion, maximum drinks consumed at one time per month, and number of binge drinking events (four or more drinks in one sitting) per month.

RESULTS

Drinking Variables

Description of Drinking Behavior—Incoming freshmen females consumed an average of 16.24 ($SD = 26.73$) drinks during the first month of college, drinking 3.25 ($SD = 3.94$) days and averaging 2.81 ($SD = 2.83$) drinks per occasion. Participants also drank a mean of 4.28 ($SD = 4.75$) maximum drinks on one occasion and had a mean of 2.00 ($SD = 3.32$) binge drinking events. Participants significantly increased maximum drinks per occasion from the last month of high school (3.62 drinks at one time, $SD = 4.62$) to the first month college (4.28 drinks at one time, $SD = 4.75$); $t(202) = 2.20$, $p < .05$. There were no other significant increases in drinking when looking at all participants. Table 1 displays mean drinking behavior in the first month of college, as well as drinking behavior from the last month of high school.

Predicting Drinking in College from Previous Drinking—In examination of our first hypothesis, we expected that high school drinking would predict college drinking. We ran a linear regression predicting drinks per month during the first month of college (college drinking) by drinks per month during the last month of high school (pre-college drinking). In support of our hypothesis, drinking during the first month of college was significantly predicted by pre-college drinking, $\beta = .526$, $t(261) = 9.97$, $p < .001$. Drinking in high school accounted for 28% of the variance in first month college drinking.

Athletes—We further predicted that incoming freshmen females who were members of an intercollegiate athletic team would have higher levels of alcohol consumption than freshmen females who are non-athletes. Overall, 43 participants identified as freshmen intercollegiate athletes. During the last month of high school, these athletes drank significantly more than their non-athlete peers on all drinking variables assessed (see Table 1). However, athletes did not significantly change their drinking during the first month of college. Interestingly, non-athlete participants significantly increased drinking days, average drinks, maximum drinks, and binge drinking events. This increase contributed to non-athletes and athletes drinking at similar levels during the first month of college, indicating that our hypothesis of greater drinking among athletes was not supported.

Potential Sorority Membership—We also specifically predicted that incoming freshmen females who intended to join a sorority would have higher levels of alcohol

consumption than females who did not intend to join a sorority. Overall, there were 95 participants who indicated an intention to pledge a sorority. In high school, female students who did not intend to pledge and those who did intend to pledge drank at similar levels. However, participants intending to pledge a sorority significantly increased drinking on all variables assessed during the first month of college. Furthermore, these women drank at significantly higher levels than their peers who did not intend to pledge a sorority (see Table 1). This occurred despite the fact that university policy prohibited freshmen from rushing Greek organizations or participating in Greek activities during their first semester on campus.

Associations with Drinking During the Transition to College—We next saved the unstandardized residual values obtained in the linear regression predicting college drinking from high school drinking. These residuals represent the transitional drinking from high school to college, as they are the part of college drinking not explained by high school drinking. We called this variable "residual drinking." We correlated this new variable with various demographic, drinking motives, and consequences variables. A correlational table is contained in Table 2. Drinking during the first month of college not explained by drinking during the last month of high school was related to income level, intention to join a sorority, athlete status, all drinking motives subscales, and two measures of consequences.

We further examined the role of demographics and other variables on changes in drinking during the transition to college using multiple regression. Family income, intention to pledge a sorority, and college athletic membership were simultaneously regressed on residual drinking. Results revealed overall significance for the model, $F_{(4, 240)} = 3.913$, $p < .05$, $R^2 = .062$; both intention to pledge a sorority, $\beta = .179$, $t_{(240)} = 2.74$, $p < .01$, and income level, $\beta = .158$, $t_{(240)} = 2.39$, $p < .05$, significantly predicted college drinking over and above previous drinking history. Specifically freshmen women intending to pledge a sorority and those from families with higher incomes were more likely to increase their drinking as they entered college.

Drinking Motives and Changes in Drinking—All four subscales of the Drinking Motives Questionnaire (DMQ; Enhancement, Social, Coping, and Conformity) correlated with residual drinking (see Table 2). However, when all four drinking motives were entered into a linear regression with residual drinking as the dependent variable, $F_{(4, 243)} = 14.17$, $p < .001$, $R^2 = .19$), only Enhancement drinking motives predicted drinking behavior, $\beta = .316$, $t_{(243)} = 2.59$, $p < .01$. Thus, although all four drinking motives are associated with increased drinking, much of this association appears to be due specifically to enhancement motives.

Alcohol-Related Negative Outcomes—RAPI scores for the first month in college were associated with residual drinking ($r = .48$, $p < .001$). That is, changes in drinking across the transition to college not accounted for by previous drinking were related to higher numbers of alcohol consequences. Additionally, residual drinking correlated with the AUDIT ($r = .43$, $p < .001$). To examine whether athletes and intended pledges had increased alcohol-related negative consequences, residual drinking was correlated with both RAPI and AUDIT scores among these two groups. The correlations were not significant for athletes ($r = .31$, $p = .09$ for the RAPI; $r = -.04$, $p = .84$ for the AUDIT), however, they were significant for

non-athletes ($r = .55$, $p < .001$ for the RAPI; $r = .54$, $p < .001$ for the AUDIT). When examining participants intending to pledge a sorority versus those who did not intend to pledge, intended pledges had significant correlations for residual drinking with both RAPI ($r = .52$, $p < .001$) and AUDIT scores ($r = .50$, $p < .001$). Those not intending to pledge also had significant correlations with residual drinks per month and RAPI scores ($r = .44$, $p < .001$) and AUDIT scores ($r = .31$, $p < .001$). A further Fischer's r to z transformation comparing RAPI and AUDIT correlations with residual drinking revealed no differences in size of correlations between intended pledges and those not intending to pledge.

Nondrinkers During the Last Month of High School

In addition to our hypotheses, we also examined participants who changed their drinking behaviors from high school to college. Fifty-two participants who reported not drinking during the last month of high school, started to drink during the first month of college. These participants consumed a mean of 16.93 ($SD = 20.36$) drinks during the first month in college, drinking 3.81 ($SD = 3.16$) days and consuming 3.61 ($SD = 1.98$) drinks per occasion. These participants also drank a mean of 5.88 ($SD = 5.18$) maximum drinks on one occasion and had a mean of 1.94 ($SD = 2.77$) binge drinking occasions. Nearly all ($n = 49$, 94%) of the nondrinkers in high school who began drinking in college intended to pledge a sorority.

Non-Binge Drinkers During the Last Month of High School

We also examined participants who initiated binge drinking in college. Specifically, 46 participants who reported drinking in high school but not binge drinking started binge drinking during the first month of college. These participants experienced a mean of 3.26 ($SD = 2.91$) binge drinking events during their first month in college and consumed a mean of 4.60 ($SD = 1.65$) drinks when drinking. Although these participants binge drank in college, they nonetheless reported drinking significantly less during the transition into college than did those women who binge drank during their last month in high school. High school binge drinkers had a mean of 4.75 ($SD = 4.05$) binge drinking occasions (significant difference at $p < .05$, $t(123) = 2.18$) and drank a mean of 5.35 ($SD = 2.21$) drinks per occasion (significant difference at $p < .05$, $t(123) = 1.99$) in their first month in college. Finally, in examining alcohol-related negative consequences, participants who binge drank during the last month of high school had significantly higher composite RAPI scores than those who did not binge drink during high school but began binge drinking in college, 4.61 ($SD = 5.15$) versus 2.13 ($SD = 3.96$), $t(184) = 3.69$, $p < .001$.

DISCUSSION

The present study examined drinking over the transition period from the last month of high school to the first month of college for freshmen females. Among freshmen female students, drinking in high school significantly predicted drinking in college. However, even after controlling for high school drinking, family income, intention to pledge a sorority, and drinking motives contributed to drinking during the first month of college. That is, women from families with higher incomes, those intending to pledge a sorority, and those with

strong enhancement motives for drinking increased their drinking in their first month of college.

Drawing on social learning theory, which suggests that students learn and make decisions about drinking from their peers who model drinking behavior, two peer groups (Greek organizations and athletics) were examined as potential moderators of the change in drinking from high school to college. Intention to pledge a sorority significantly predicted an increase in drinking upon arrival to college even though university policy at the research site did not allow incoming freshmen to pledge or participate in any Greek-affiliated activities or events until the second semester of freshmen year. Thus, freshmen women who desire to be affiliated with the Greek system increase their drinking by significantly higher levels than students who do not intend to pledge a sorority, even after controlling for high school drinking and despite the fact that they drank at similar levels during high school. Further, of the 52 students who did not drink at the end of high school but initiated drinking during the first month of college, 94% intended to pledge a sorority. This suggests the important role of students' expectations about sorority life on their drinking decisions. Student affairs personnel may wish to intervene with students who intend to join a fraternity or sorority by implementing interventions that seek to change expectations about Greek life and highlighting philanthropic service and other aspects of Greek affiliation.

Contrary to our prediction that college athletes increase drinking more than non-athletes in their first weeks in college, it was non-athletes who evidenced increased drinking upon arriving at college. It is certainly possible that incoming freshmen athletes might drink less during the initial month of college in order to play their best, impress the coaches, make the starting line-up, or comply with team rules. Although it is difficult to assess athlete drinking behavior due to the variability of teams being "in season" versus "out of season" (e.g., Martin, 1998; Nelson & Wechsler, 2001), it appears that at the start of college, the indoctrination of athletes into the team and the support they receive from coaches, trainers, and fellow teammates may promote an in season intensity, regardless of actually being in season. Further longitudinal research is necessary to examine if athlete status continues to attenuate drinking behavior throughout the college years or if this protective buffer is a novel effect found only at the start of college. It may be important for university staff members who work with college student athletes to promote the care and concern found in season throughout the academic year, which may decrease the variation found between athletes in season versus out of season and reduce problematic drinking.

Beyond previous drinking experience and in addition to the intention to pledge a sorority, higher family income and enhancement drinking motives were associated with increased drinking in the first month of college. Regarding income, it may be that students with greater resources might not have to work during their freshmen year of college leaving them with more idle time to engage in social activities including drinking. Although our data did not allow us to explore this possibility, future studies might want to examine if work experience or extra-curricular activities attenuate the increase in drinking upon arrival to college. Additionally, those students who are drinking to enhance their mood may have internal issues that may benefit from exploration by university counselors.

Furthermore, students who did not drink prior to attending college but initiated drinking during the first few months of college were found to have significantly lower alcohol-related negative consequences than their high school drinking peers who maintained their drinking behaviors over the transition. Lower alcohol-related negative consequences were also found for non-binge drinkers in high school who started to binge drink in college. These findings contradict the common perception among college personnel and students that the drinkers in college who experience the most problems are the naïve drinkers who do not have prior experience with alcohol (Institute of Medicine, 1990). This perceptual bias may exist given that there may be some new drinkers in college who experience significant problems. However, these results suggest that greater consequences are associated with more prior drinking experience. University staff may benefit from an awareness of this finding and hold realistic views of their students who come to college with prior alcohol experience. Normative campaigns can focus on describing the drinking culture on campuses, highlighting the percentage of nondrinkers and the moderate levels of those that do drink. Such normative information may serve to reduce the misperception that all students engage in frequent heavy drinking.

Limitations

Although the current study offers a brief snapshot of this transitional time, future longitudinal research would provide a more detailed description of drinking trajectories across this period. Examining students, for example, from sophomore year of high school to sophomore year of college, may contribute to the development of a predictive model that tells us which students are at the most risk for developing alcohol-related disorders and heavy patterns of use.

Another limitation is the use of retrospective self-report measures to assess alcohol consumption. Although the retrospective method of data collection relies on the memory of participants, TLFB assessments have been found to be reliable and valid with college students (Sobell et al., 1986). Likewise, self-report measures of drinking have been found valid and reliable in other studies on college students (e.g., O'Hare, 1991). Finally, although at the current project took place at a diverse private liberal arts university of medium size (5,000–10,000 students), it involved only female students, limiting the ability to generalize the findings to universities with larger student bodies and to male students.

Previous research has highlighted the importance of the first 6 weeks of college on the development of college drinking patterns (e.g., Baer et al., 1995; NIAAA, 2002; Schulenberg et al., 2001). The current findings suggest that for freshmen women, drinking during the transition to college is related to previous drinking. Beyond previous drinking, the intention to pledge a sorority, higher family income level, and enhancement motives for drinking all were related to increased drinking. Given that early drinking patterns established during the freshmen year contribute to drinking patterns throughout college (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994), universities are encouraged to consider programs that change perceptions of Greek activities, delay Greek affiliation until the second semester, and focus early intervention efforts on students who intend to pledge. Further, knowing previous drinking history of incoming students may help in targeting

prevention and intervention strategies. Nondrinking and moderate drinking students need support to continue their lower risk drinking behavior. Heavier-drinking incoming freshmen may need to be identified and intervened with early to reduce the likelihood of increased drinking and associated negative consequences during the transition to college.

Acknowledgments

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TABLE 1

Changes in Drinking for All Participants, Athletes vs. Non-Athletes, and Pledging vs. Not Pledging a Sorority

	Last Month High School Mean (*SD*)	First Month College Mean (*SD*)
All Participants (*N* = 263)		
Total Drinks	14.11 (28.47)	16.24 (26.73)
Drinking Days	3.03 (4.72)	3.25 (3.94)
Average Drinks	2.49 (3.01)	2.81 (2.83)
Max Drinks	3.62 (4.62)	4.28 (4.75)*
Binge Drinking Episodes	1.68 (3.45)	2.00 (3.32)
Athletes (*N* = 43)		
Total Drinks	23.30 (32.28)^a	18.49 (23.78)
Drinking Days	4.65 (5.90)^a	3.28 (4.04)
Average Drinks	3.75 (2.98)^b	2.95 (3.05)
Max Drinks	5.81 (5.18)^b	4.53 (4.85)
Binge Drinking Episodes	3.19 (5.18)^b	2.56 (3.55)
Non-Athletes (*N* = 221)		
Total Drinks	12.31 (27.39)	15.91 (27.28)*
Drinking Days	2.71 (4.39)	3.24 (3.93)
Average Drinks	2.24 (2.96)	2.80 (2.80)**
Max Drinks	3.19 (4.38)	4.25 (4.47)**
Binge Drinking Episodes	1.38 (2.92)	1.90 (3.27)**
Women Pledging A Sorority (*N* = 95)		
Total Drinks	13.89 (20.47)	21.86 (26.67)^{b**}
Drinking Days	3.36 (5.07)	4.48 (4.41)^{c***}
Average Drinks	2.51 (2.91)	3.28 (2.74)*
Max Drinks	3.70 (4.37)	5.20 (4.84)^{b*}
Binge Drinking Episodes	1.72 (3.07)	2.89 (3.72)^{c**}
Women Not Pledging A Sorority (*N* = 148)		
Total Drinks	11.85 (26.38)	11.42 (20.98)
Drinking Days	2.61 (4.55)	2.43 (3.36)
Average Drinks	2.21 (2.86)	2.44 (2.62)
Max Drinks	3.16 (4.46)	3.59 (4.33)
Binge Drinking Episodes	1.45 (3.57)	1.38 (2.84)

Notes.

Asterisks represent a significant increase from pre-college to first month of college (W/N groups/left to right: * $p < .05$, ** $p < .01$, *** $p < .001$).

Superscripts a, b, and c represent a significant difference in means between groups (B/W groups/top to bottom) during equivalent time periods ([a] = $p < .05$, [b] = $p < .01$, [c] = $p < .001$).

TABLE 2

Intercorrelations Between Residual Change and Variables of Interest

	Residual Drinking[a]	Income	Athlete	Greek Intention	RAPI	AUDIT	DMQ-Coping	DMQ-Conformity	DMQ-Social	DMQ-Enhancement
Residual Drinking[a]	—									
Income	.166 **	—								
Athlete	−.059	.122	—							
Greek Intention	.197 **	.110	−.231 **	—						
RAPI	.484 **	.076	.172 **	.143 *	—					
AUDIT	.428 **	.093	.181 **	.198 **	.693 **	—				
DMQ-Coping	.286 **	.030	.167 **	.148 *	.589 **	.552 **	—			
DMQ-Conformity	.174 **	−.044	−.023	.125	.355 **	.333 **	.494 **	—		
DMQ-Social	.410 **	.035	.083	.185 **	.668 **	.643 **	.674 **	.478 **	—	
DMQ-Enhancement	.432 **	.060	.066	.208 **	.623 **	.648 **	.646 **	.342 **	.869 **	—

[a]Residual Drinking equals drinking during the first month of college not explained by high school drinking.

*
Significant at the .05 level (2-tailed).

**
Significant at the .01 level (2-tailed).