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## Authors
Logan, Diane E
Mastroleo, Nadine R
Wood, Mark D
et al.

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# Do As I Say, Not As I Do: Drinking Behaviors and Perceptions of Peer Counselors Working With Mandated College Students

**Diane E. Logan**[1], **Nadine R. Mastroleo**[1], **Mark D. Wood**[2], and **Brian Borsari**[1,3]

[1]Center for Alcohol and Addiction Studies, Brown University, Providence, RI, USA

[2]Department of Psychology, University of Rhode Island, North Kingstown, RI, USA

[3]Department of Veterans Affairs Medical Center, Providence, RI, USA

## Abstract

Little is known about the drinking behaviors and perceptions of the peers facilitating campus alcohol interventions. The current study examined these trajectories in peer counselors ($N$=12) providing personalized normative feedback interventions to undergraduates mandated to clinical services. Peer counselors completed four monthly self-assessments. In spite of facilitating interventions to reduce drinking and associated harms, peer drinking behaviors and expectancies did not change, although significant between subjects effects suggest various trajectories. Peer counselors did correct overestimates of binge drinking but progressively underestimated abstinence norms. Despite the lack of change in the peer counselor behaviors, the mandated clients significantly reduced their drinking, suggesting it may be more important to "Do as I Say" rather than as the facilitator does.

### Keywords

alcohol; peers; intervention; norms; mandated

Alcohol continues to be the most prevalently used and abused substance on college campuses, with recent national findings indicating a 30-day prevalence rate of 68%, and 40% of students saying they have "been drunk" in the past month (Johnston, O'Malley, Bachman, & Schulenberg, 2013). Numerous consequences are associated with college student alcohol use, including unintentional injuries and deaths, physical and sexual assaults, legal problems, academic failure, and health and developmental problems (Hingson, Heeren, Winter, & Wechsler, 2005; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Hingson, Zha, & Weitzman, 2009; Pascarella et al., 2007; Perkins, 2002)

Given these significant risks and consequences, national agencies have issued "Call to Action" publications targeting underage drinking (Department of Health and Human



Corresponding Author: Nadine R. Mastroleo, College of Community and Public Affairs, Binghamton University PO Box 6000, Binghamton, NY 13902-6000, nmastrol@binghamton.edu.

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Services [DHHS], 2007) and college student drinking specifically (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2002, 2007). Both of these directives, along with numerous reviews and meta-analyses (Branscum & Sharma, 2010; Carey, Scott-Sheldon, Carey, & DeMartini, 2007; Cronce & Larimer, 2011; Larimer & Cronce, 2002, 2007) emphasize the importance of empirically supported interventions such as the Brief Alcohol Screening and Intervention for College Students (BASICS; Dimeff, Baer, Kivlahan, & Marlatt, 1999). BASICS combines personalized normative feedback (PNF) with Motivational Interviewing (MI; Miller & Rollnick, 2012) in a brief, 50-min individual feedback session (Dimeff et al., 1999). Multiple components comprise BASICS sessions, including feedback on drinking and estimated blood alcohol content (eBAC), consequences, norms, and protective behavioral strategies (PBS, Martens, Pederson, Labrie, Ferrier, & Cimini, 2007; Martens et al., 2004).

Tens of thousands of college students violate campus alcohol policies and receive mandatory alcohol interventions each year (Hoover, 2003; Porter, 2006), and research findings over the past decade have supported the efficacy of professionally delivered BASICS in reducing consumption or consequences within these mandated populations (Borsari & Carey, 2005; Borsari et al., 2012; DiFulvio, Linowski, Mazziotti, & Puleo, 2012; Larimer & Cronce, 2007; Logan, Kilmer, King, & Larimer, 2015). Research studies evaluating BASICS and other brief alcohol interventions led by peer counselors have documented equivalent (Fromme & Corbin, 2004; Mastroleo, Turrisi, Carney, Ray, & Larimer, 2010; Turrisi et al., 2009) if not improved (Larimer et al., 2001) outcomes compared with professional-led interventions.

Peer counselors offer the opportunity for lower cost, effective interventions. The inclusion of peers in intervention efforts has a rich history in the student setting (D'Andrea & Salovey, 1996; Ender & Newton, 2000), and BASICS is often delivered by peers in real world college settings (Mastroleo, Mallett, Ray, & Turrisi, 2008). Studies also suggest that students relate better to peers than to older adults, that peer-delivered programs have a stronger influence on students' attitudes and behavior, that norms corrections and increased PBS following peer-delivered interventions are related to decreases in drinking and consequences, and that first-year students may respond better to interventions led by upper division peers (Bergen-Cico, 2000; Cimini et al., 2009; Fromme & Corbin, 2004).

Given that peer counselors often live among the students they counsel and understanding their training and supervision is often minimal (Mastroleo et al., 2010), the importance of exploring the peer counselors' own beliefs and behaviors around alcohol may be important to consider when attempting to implement such approaches. However, research has yet to consider what (if any) influence session didactic content and exposure to participant feedback may have on the peer counselors' alcohol-related behaviors and perceptions. Given the theoretical framework supporting the use of peer counselors as intervention agents, specifically offering alcohol use reduction messages from similar-aged college students, administrators may assume (or at least hope) that the peer counselors support the harm reduction messages and personally model drinking behaviors consistent with the intervention framework.

Peer influence on drinking behaviors among college students has received significant theoretical and research attention (Capone, Wood, Borsari, & Laird, 2007; Graham, Marks, & Hansen, 1991; Read, Wood, & Capone, 2005; Wood, Read, Palfai, & Stevenson, 2001). For example, a key component of BASICS is the provision of accurate normative information, which in turn can influence personal alcohol use (Dimeff et al., 1999; Lewis et al., 2011; Lewis & Neighbors, 2007). However, it has been suggested that this procedure may have the potential for a "boomerang effect" among those below the current norm, in which light drinkers may *increase* their drinking to match their peers (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Peer counselors delivering BASICS are not merely passive recipients of normative education (Dimeff et al., 1999). These peers are trained in alcohol information and norms as well as motivational techniques (Mastroleo, Magill, Barnett, & Borsari, 2014), and then repeatedly exposed to heavy drinking peers. They are taught to help identify risks, generate alternatives and strategies, and help motivate moderate drinking limits (e.g., up to but not exceeding an eBAC of .06; Dimeff et al., 1999) in participants, but not in themselves. While research has begun to examine the influence training and supervision of peer counselors on participant alcohol use (Mastroleo et al., 2014), very little is known about peer counselors drinking behaviors and perceptions.

Thus, this study sought to gather descriptive information on peer counselors' drinking behaviors and perceptions and longitudinally evaluate the potentially beneficial influence of training and supervision versus the possibly iatrogenic influence of interacting with risky drinking mandated participants. Consistent with the intervention goals, we hypothesized that peer counselors would endorse low drinking rates, would decrease their drinking and consequences, increase PBS, decrease expectancies, and correct normative misperceptions related to heavy episodic drinking (HED) and abstinence rates among undergraduates.

## Method

### Procedure

Participants ($N$=12) were undergraduate student Health and Wellness Educators (HAWE) in the Office of Health Promotion and Education at a liberal arts University in the Northeast. HAWE's were invited to participate in the research study during the university's preorientation training, at which point 100% (12 total) agreed to participate and signed a consent form for inclusion. HAWE's were trained as peer counselors to deliver BASICS sessions for undergraduate mandated students. Participants received email invitations and completed four monthly web-based assessments of their own drinking behaviors and perceptions over the course of providing the brief alcohol interventions to mandated students in Fall semester 2009. Participants were paid $20 for completing each assessment (for a possible total of $80). All procedures were approved by the appropriate University institutional review boards.

### Peer Counselor Training Procedures

**Training—**Training was conducted using a 2-day (12 hours total) protocol prior to the start of the Fall 2009 semester. The training workshop consisted of a review of the BASICS manual and videotaped examples of BASICS, Motivational Interviewing (MI) skill practice

exercises, and review of the individual graphic feedback information used in each session. Peer counselors were instructed on specific alcohol information related to BAC levels, alcohol expectancies, norms, PBS, and other general information described in the BASICS manual (Dimeff et al., 1999). MI training included reflective listening, use of open- and closed-ended questions, change talk facilitation, rapport building strategies, and strategies for resistant clients. Following the training, each peer counselor conducted two audio recorded BASICS role plays.

**Peer counselor supervision—**All participants completed an intensive initial training as a single group. Then, depending on random assignment, participants either received weekly individual supervision plus weekly group supervision (the evidence-based application approach; EAA), or only weekly group supervision (the common practice approach). One hour weekly individual supervision for EAA counselors included review of audio-recorded BASICS sessions, offering tailored feedback on MI skill demonstration and specific coaching to improve delivery. Weekly group supervision lasted 30 to 45 minutes and included both the common practice approach and EAA counselors discussing concerns and strategies for working with their mandated clients. The second author conducted both individual and group supervision meetings.

## Measures

A standard drink was defined as 12 oz. beer, 4 oz. wine, and 1 oz. distilled liquor.

**Alcohol consumption—**Drinking rates were evaluated using a modified version of the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Participants reported their typical drinking on each day of the week, averaged over the last month. Estimated peak blood alcohol content levels (eBAC) were calculated based on quantity and consumption, body weight, and birth sex (Matthews & Miller, 1979) independently for Friday and Saturday, and the greater of the two eBAC levels was used to establish a peak weekend eBAC. Weekly drink totals were calculated by adding the responses for typical drinks on each of the 7 days.

**HED frequency—**HED was assessed by asking students, “Think back over the last two weeks. How many times have you had 5 or more drinks (4 for women) in a row within 2 hours?” (NIAAA, 2004).

**Alcohol-related consequences—**The Young Adult Alcohol Consequences Questionnaire (YAACQ, Read, Kahler, Strong, & Colder, 2006; Read, Merrill, Kahler, & Strong, 2007) assessed whether each of 48 potential consequences were experienced in the past month, such as “While drinking, I have said or done embarrassing things.” The dichotomized responses were summed. The YAACQ has demonstrated high internal consistency in research with mandated college students ($\alpha$=.91; Borsari et al., 2012) as well as in this sample ($\alpha$=.71).

**Protective behavioral strategies—**Individuals’ use of 14 drinking-related PBS was assessed using the Protective Behavioral Strategies Survey (PBSS; Martens et al., 2005,

2007). Participants identified behaviors they engage in while drinking (α=.90 in this sample). Example items included: "a) Switch between alcoholic and non-alcoholic beverages, b) Eat before and/or during drinking, c) Set limits on how much you drink based on your blood alcohol level, and d) Use a designated driver." Response options ranged from 0 to 5 with "0"=*I don't drink*, "1"=*Never*, "2"=*Rarely*, "3"=*Sometimes*, "4"=*Usually*, and "5"=*Always*.

**Alcohol expectancies—**The Comprehensive Effects of Alcohol (CEOA) scale (Fromme, Stroot, & Kaplan, 1993) assessed both the likelihood (e.g., "I would enjoy sex more," or "I would feel guilty,") and the desirability of each effect. Based on prior research suggesting that participant valence ratings do not always match researchers' theoretical constructs (Mallett, Bachrach, & Turrisi, 2008) and may differentially influence likelihood ratings (Logan, Henry, Vaughn, Luk, & King, 2012), separate means were calculated for the perceived likelihood of experiencing positive and negative consequences as they were defined by the individual, such that the mean likelihood (ranging on a 4-point from *disagree* to *agree*) was included only if the participant indicated the effect was *bad* or *slightly bad* for negative perceptions and *good* or *slightly good* for positive expectancies. Internal consistency was adequate for both positive (α=.90) and negative (α=.75) expectancies.

**Normative perceptions—**Participants provided estimates of the percentage of college students they believed engaged in HED and those that abstained from alcohol.

### Data Analysis Plan

Our primary goals were (a) identify baseline drinking behaviors and perceptions among peer counselors and (b) evaluate longitudinal changes in those behaviors and perceptions. To achieve these goals, Generalized Linear Modeling (GLM) analyses, conducted in SPSS 20, evaluated longitudinal variations in the repeated measures variables.

## Results

### Participants

Participants ($N$=12) were undergraduate peer counselors (mean age=19.75; 83.3% female; 91.7% Caucasian; 91.7% heterosexual). Most (91.7%) lived on-campus. Regarding drinking patterns, 41.7% identified as "light, social, non-problem drinker," 50.0% identified as "moderate, social, non-problem drinker," and 8.3% identified as "heavy, non-problem drinker."

### Randomization and Retention

Participants were randomized to receive individual and group supervision or only group supervision. Independent samples $t$ tests indicate no differences between the two conditions with the exception of supervised counselors reporting significantly lower eBAC at baseline ($M$=0.05, $SD$=0.03) compared with the group-only supervised counselors ($M$=0.11, $SD$=0.06; $t$=2.36, $p$<.05). There were no differences in longitudinal outcomes based on supervision condition. All 12 participants completed the baseline survey and the first two monthly followups. Eight participants (75%) completed the final monthly followup.

Independent samples *t* tests indicated that completers and non-completers did not vary on any variables of interest at baseline ($p>.10$).

### Baseline Drinking and Longitudinal Outcomes

GLM evaluated the longitudinal trajectories of peer counselor drinking behaviors and perceptions (see Table 1). Baseline eBAC levels represent one participant reporting a .00 eBAC, four reporting levels under the moderate .06 eBAC limit, and seven reporting levels exceeding .06 eBAC. GLM analyses identified no within subjects differences or linear change, although between subjects analyses were significant, $F(1,7)=16.31$; $p<.01$, suggesting some counselors decreased their drinking while others increased over the course of the study. Due to power limitations in this small sample, we were unable to test hypotheses regarding group differences in trajectories. Findings of non-significant within subjects differences and linear change were consistent for the other drinking behaviors, including weekly drinks, frequency of HED, alcohol-related consequences, and use of alcohol-related PBS, although each of these variables had significant between subjects effects ($p<.05$, see Table 1).

Changes in perceptions were mixed. Similar to behaviors, both positive and negative alcohol expectancies demonstrated non-significant within subjects differences and linear change, although between subjects changes were significant. However, all changes in perceived norms were significant (within subjects changes $p<.05$; between subjects changes $p<.001$; see Table 1 and Figure 1), with counselors improving the accuracy of their prevalence estimates of college student HED (baseline $M=54.38\%$, $SD=10.16\%$; final $M=40.88\%$, $SD=17.70\%$) but underestimating college student abstainers (baseline $M=26.88\%$, $SD=7.04\%$; final $M=19.88\%$, $SD=7.00\%$). Thus, peer counselor perceptions of HED were corrected while estimates of abstinence inaccurately decreased throughout the course of the study.

## Discussion

This is the first study, to our knowledge, to examine the drinking behaviors and attitudes of the undergraduate peer counselors providing brief alcohol interventions on college campuses. This study sought to document baseline levels of drinking behaviors and perceptions and evaluate changes over time. On average, the peer counselors exceeded both moderate eBAC levels (Dimeff et al., 1999) and the national standards for low-risk drinking (NIAAA, 2010). However, peer counselors consumed less than the mandated students to whom they provided services (peak weekend eBAC for peer counselors $M=0.09$, $SD=.06$ vs. mandated students $M=0.16$, $SD=.08$; weekly drinks for peer counselors $M=9.1$, $SD=6.6$ vs. mandated students $M=18.4$, $SD=13.8$; Mastroleo et al., 2014).

The lack of behavioral change in the peer counselors is noteworthy, as the counselors were exposed to the same materials and trained in eliciting motivation from the mandated students to whom they provided services. Although counselors receive the same didactic educational training as the participants, they did not receive any personalized MI components to elicit personally relevant reasons for change. Consistent with prior reviews (Cronce & Larimer, 2011; Larimer & Cronce, 2002, 2007), it is possible that increases in knowledge did not

translate into behavioral changes among the counselors. Another possibility is that peer counselors who self-select to provide these services are already thoughtful about their drinking and aware of the role alcohol plays in their college experience and thus are less influenced to change behaviors. It is also possible that counselors did experience an increase in motivation, but potential improvements were offset by the inaccurate normative influence of their heavier drinking participants (Collins et al., 1985). Future studies could build on previous research (Stone, Aronson, Crain, Winslow, & Fried, 1994) suggesting that increasing cognitive dissonance among interventionists by explicitly developing discrepancies between the training materials behaviors might result in changes.

While behavioral changes were non-significant, normative estimates of HED and abstinence significantly decreased. For HED, final estimates were very similar to the national and campus norms (American College Health Association, 2008) provided to the counselors during training (actual binge drinking norm: 40.0%, estimated norm: 40.9%) and were significantly improved from the original overestimates of 54.4%. The opposite trend emerged for abstinence, however. The original estimate of 26.9% was similar to the actual campus abstinence rate of 25%, a norm that was provided during training and listed on each participant PNF sheet. However, peer counselor estimates of abstinence dropped to 19.9% during the study. Previous research has documented that abstinent and lighter drinking participants do not increase their drinking after learning that they are drinking less than typical students (Larimer et al., 2007; Prince, Reid, Carey, & Neighbors, 2014), reducing concerns over a potential boomerang effect (Schultz et al., 2007). However, no studies to date have assessed changes in peer counselor beliefs and behaviors after being repeatedly exposed to heavier drinking students during their interventions. Our findings suggest mixed outcomes, such that peer counselors corrected their misperceptions of HED but did not maintain their perceptions of abstinence. This is particularly concerning as peer counselors appeared to have provided abstinence norms they did not believe themselves.

In spite of a lack of drinking reductions and inaccurate norms among the peer counselors, the mandated students receiving the BASICS interventions significantly decreased both their peak eBAC levels and weekly drinking (Mastroleo et al., 2014), suggesting it may be more important to “Do as I say, not as I do” when it comes to peer facilitated brief interventions. Peers did not share their personal drinking patterns or beliefs with the mandated students, and of course no modeling behaviors were present as interventions involved discussing (but not consuming) alcohol. Thus, these findings suggest peer counselor beliefs and behaviors may be less important in facilitating client change than their intervention adherence.

While our responsibilities to provide evidence-based clinical interventions appear to be met for clients, the question remains what if any ethical and clinical responsibility we have for the peer counselors we recruit, train, and supervise to provide the interventions. The findings of this study suggest that most of the peer counselors exceeded low-risk drinking guidelines, some increased their drinking during the course of the study, and that overall they misperceived the provided abstinence norms. The concept of counselor trainee impairment has been long established in the literature (e.g., Bemak, Epp, & Keys, 1999; Lamb et al., 1987) and has significant impact on the trainees, their institutions, and the profession in general (Wolf, Green, Nochajski, & Kost, 2014). Impairment is defined by the American

Counseling Association (ACA) Code of Ethics (2014) as “physical, mental, or emotional problems” that interfere with client care, and is frequently caused or accompanied by alcohol and other substance use disorders (Huprich & Rudd, 2004; Olkin & Gaughen, 1991; Russell & Peterson, 2003). Given the peer counselors’ repetitive proximity to heavy drinking clients and risky drinking behaviors, further research could elicit qualitative data from peer counselors, explore opportunities to increase personal motivation, and use a daily measure (e.g., Timeline Followback; Sobell & Sobell, 1992) to assess potential temporal relationships between peer counseling and individual drinking, in an effort to minimize or avoid the potential for later impairment.

### Limitations

A number of limitations to the current study warrant attention. First, a very small sample size ($N$=12) and attrition limits our power to detect change in drinking behaviors and perceptions among peers. As such, null findings may represent a lack of change or be a product of our inability to detect changes. Second, and related to the small sample, we were unable to evaluate differences in trajectories or test mediators and moderators of change among the counselors. Third, the counselors were demographically homogenous limiting generalizability of our findings. Furthermore, the lack of a counselor control group precludes us from concluding the training resulted in normative misperceptions. Finally, the followup is a relatively short period of time. Given the evidence for a “sleeper effect” for motivational interventions (White, Mun, Pugh, & Morgan, 2007), it is possible that counselor changes would also not be detectable for a longer period of time. Further studies could evaluate a larger and more diverse group of peer counselors, including a comparison condition of peer counselors not specializing or trained in alcohol interventions, to evaluate behavioral and perceptive changes and predictors over time.

### Summary

In spite of the limitations, the findings from this exploratory study of undergraduate peer counselor drinking behaviors and perceptions fills a gap in the literature regarding peer provider characteristics. Our findings suggest that peer counselors engage in the same risky drinking behaviors and experience the same consequences as their participants, but that counselor behaviors do not need to be consistent with intervention guidelines to be effective in promoting participant behavior change. Furthermore, exposure to heavier drinking peer participants may have influenced abstinence misperceptions but was not associated with overall increases in drinking behaviors. We expect a lot from our peer counselors, who often commit extensive time with little to no compensation and put themselves at risk of skewed perceptions associated with interacting with heavy drinking peers. As more campuses move toward integrating peers into prevention and intervention efforts (Mastroleo & Logan, 2014), additional research is needed to identify the specific influences of and barriers to peer counselor change so we may continue to support these front-line educators and increase the match between what they say and what they do.

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## Biographies

**Diane E. Logan** received her PhD in clinical psychology from the University of Washington in 2013. She completed her postdoctoral training at Brown University in the Center for Alcohol and Addiction Studies. In 2015, Dr. Logan joined West Hawaii Community Health Center as a clinical psychologist within a primary healthcare setting. In addition to her clinical duties, she is the project director for a Substance Abuse Service Expansion grant awarded from the Health Resources and Services Administration to expand substance use services including medically assisted treatment in rural communities. Her research interests include implementing and evaluating behavioral interventions in high-risk populations, and training primary care and behavioral health providers in assessment and treatment of substance use disorders.

**Nadine R. Mastroleo,** Assistant Professor in the PhD Program in Community and Public Affairs at Binghamton University, completed her PhD in counselor education and supervision from The Pennsylvania State University in 2008. She completed her postdoctoral training at Brown University and the Center for Alcohol and Addiction Studies. She was an assistant professor (research) at Brown University in the Department of Behavioral and Social Sciences from 2010–2015. Her primary area of research focus is on evaluating brief alcohol interventions with college students and individuals who drink heavily. Specifically, she examines the within-session behaviors of brief motivational interventions to study the mechanisms of behavior change. She is also working on the implementation of multi-risk brief, behavioral interventions with emergency department patients and developing evidence-based intervention approaches to reduce drinking among student-athletes.

**Mark D. Wood** served in the United States Navy and obtained his PhD in Social Psychology from the University of Missouri in Columbia in 1996. He was a postdoctoral fellow in Community Health at Brown University from 1996–1998. Since 1998, he served on the faculty in the Department of Psychology at the University of Rhode Island until his death in April of 2015. Dr. Wood was an applied social psychologist and his professional activities involved research, teaching, and service in the areas of alcohol use and misuse, social psychology, and research methods. In his main interest area, alcohol research, his focus was on examining psychosocial factors influencing alcohol misuse, especially among college students, and on investigating both individual- and environmental-level preventive interventions aimed at reducing negative consequences associated with alcohol misuse.

**Brian Borsari** received his PhD in clinical psychology from Syracuse University in 2003. He is currently at the San Francisco Veteran Affairs Medical Center and Professor in Residence in the Department of Psychiatry at the University of California – San Francisco. His research interests include the development and implementation of brief motivational interventions with college student drinkers, the social influences on alcohol (e.g., modeling and norms), high-risk behaviors such as pregaming and drinking games, and in-session processes of motivational interviewing that are related to behavior change. In 2007, Dr. Borsari joined the Veteran Health Administration as a clinical psychologist. His research interests there involve the assessment and treatment of substance use disorders, training VHA staff in motivational interviewing and other client-centered communication to facilitate behavior change, and working with veterans who are attending college.

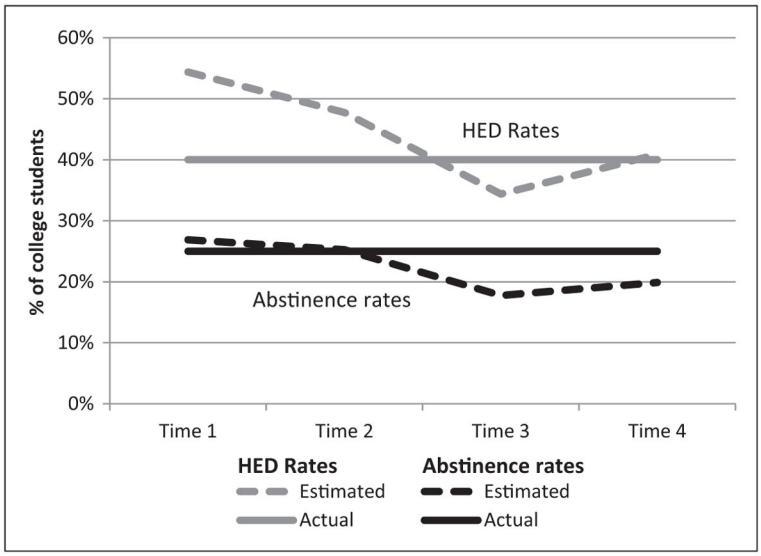


**Figure 1.**

Peer counselors' perceived norms of college student heavy episodic drinking (HED) and abstinence rates, compared with actual campus norms.

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**Table 1**

Descriptives and GLM Outcomes of Longitudinal Drinking Behaviors and Norms.

| | Time 1 | Time 1 | Time 2 | Time 3 | Time 4 | Within subjects | | Linear change | | Between subjects | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Range** | **Mean (*SD*)** | **Mean (*SD*)** | **Mean (*SD*)** | **Mean (*SD*)** | ***df*** | ***F*** | ***df*** | ***F*** | ***df*** | ***F*** |
| Drinking behaviors | | | | | | | | | | | |
| Peak weekend eBAC | .00–.17 | .09 (*.06*) | .09 (*.07*) | .08 (*.06*) | .07 (*.08*) | *3* | 0.28 | *1* | 0.65 | *1* | 16.31$^{**}$ |
| Weekly drinks | 0–21 | 9.13 (*6.60*) | 10.38 (*7.19*) | 8.38 (*6.00*) | 11.88 (*11.73*) | *3* | 1.39 | *1* | 1.04 | *1* | 13.85$^{**}$ |
| HED frequency | −5 | 1.38 (*1.85*) | 1.63 (*1.85*) | 1.88 (*2.03*) | 1.88 (*1.55*) | *3* | 0.44 | *1* | 1.12 | *1* | 8.94$^{*}$ |
| Consequences | 0–9 | 5.13 (*3.14*) | 5.38 (*5.10*) | 9.25 (*11.56*) | 6.88 (*7.22*) | *3* | 0.83 | *1* | 0.86 | *1* | 12.07$^{*}$ |
| Protective strategies | 41–70 | 54.13 (*8.51*) | 54.12 (*10.16*) | 51.63 (*9.30*) | 52.63 (*10.95*) | *3* | 0.98 | *1* | 1.19 | *1* | 261.51$^{***}$ |
| Perceptions | | | | | | | | | | | |
| Positive expectancies | 0.0–4.5 | 2.50 (*1.59*) | 2.41 (*2.10*) | 2.32 (*1.50*) | 2.63 (*1.72*) | *3* | 0.15 | *1* | 0.21 | *1* | 20.78$^{**}$ |
| Negative expectancies | 0.0–7.0 | 3.35 (*1.85*) | 2.36 (*2.01*) | 2.41 (*1.55*) | 2.35 (*1.54*) | *3* | 1.08 | *1* | 1.43 | *1* | 31.59$^{**}$ |
| HED norms | 40–65 | 54.38 (*10.16*) | 47.75 (*19.73*) | 34.38 (*15.45*) | 40.88 (*17.70*) | *3* | 3.20$^{*}$ | *1* | 6.46$^{*}$ | *1* | 129.47$^{***}$ |
| Abstinence norms | 20–40 | 26.88 (*7.04*) | 25.25 (*8.57*) | 17.75 (*8.81*) | 19.88 (*7.00*) | *3* | 4.39$^{*}$ | *1* | 7.39$^{*}$ | *1* | 109.50$^{***}$ |

*Note*. eBAC=estimated blood alcohol content; HED=heavy episodic drinking.

$^{\dagger}$ $p<.10$.

$^{*}$ $p<.05$.

$^{**}$ $p<.01$.

$^{***}$ $p<.001$.