Published in final edited form as:

Addict Behav. 2008 October ; 33(10): 1375–1381. doi:10.1016/j.addbeh.2008.06.014.

Are All Negative Consequences Truly Negative? Assessing Variations Among College Students' Perceptions of Alcohol Related Consequences

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Abstract

Brief feedback sessions have been shown to reduce alcohol consumption in college student samples. However, these feedback sessions show mixed results in reducing negative consequences of alcohol consumption. Because the discussion of alcohol consequences is a component of feedback sessions, it was seen as important to evaluate the degree to which college students perceive these consequences as negative. The present study assessed college students' perceptions of positivity-negativity of alcohol-related consequences they experienced during the past year. The findings revealed college students' perceptions of positivity-negativity varied depending on the consequence that was assessed. Most consequences were considered negative by greater than 50% of the sample. There were six consequences that were not considered negative by the majority of the sample and of these, all were considered positive or neutral by greater than at least 50% of the sample. Finally, perceived positivity of the consequences were associated with higher weekly drinking patterns for vomiting, blackouts, regretted sex, late to work/class, skipping an evening meal, and being hungover. Results are discussed in reference to improving brief alcohol interventions for college students.

Keywords

College Drinking; Alcohol; Perceptions of Consequences

Introduction

Brief individual-based motivational interventions incorporating feedback have been successful in reducing college student drinking and have received considerable empirical support in the literature (Larimer & Cronce, 2002; Larimer, Cronce, Lee, & Kilmer, 2004/2005; Walters & Neighbors, 2005). Studies have shown reductions in alcohol consumption across different college subpopulations including fraternity members (Larimer, Turner, Anderson, Fader, Kilmer, Palmer, et al., 2001), mandated students (e.g., White, Morgan, Pugh, Celinska, Labouvie, & Pandina, 2006), high-risk freshmen (e.g. Marlatt, Baer, Kivlahan, Dimeff, Larimer, Quigley, et al., 1998) and athletes (e.g., Mallett, Turrisi, Larimer, Mastroleo, Ray, Giesner, et al., 2007). Due to the efficacy of these interventions in reducing drinking, they have

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become very popular among universities and are being implemented in practice across the country (Larimer & Cronce, 2007; Mastroleo, Mallett, Ray, & Turrisi, 2007).

In contrast to the reduction observed for alcohol consumption, numerous studies examining the efficacy of feedback interventions have shown inconsistent reductions in consequences (e.g. Barnett, Murphy, Colby, & Monti, 2007; Borsari & Carey, 2000, 2005; Kypri, Saunders, Williams, McGee, Langley, Cashell-Smith, et al., 2004; Larimer, Lee, Kilmer, Fabiano, Stark, Geisner, et al., 2007; Larimer et al., 2001; Larimer & Cronce 2002, 2007; Marlatt et al., 1998; McNally, Palfai, & Kahler, 2005; Murphy, Benson, Vuchinich, Deskins, Eakin, Flood, et al., 2004; Neal & Carey, 2004; Neighbors, Larimer & Lewis, 2004; Walters, Vader, & Harris, 2007; White et al., 2006; Wood, Capone, Laforge, Erickson, & Brand, 2007). For example, some studies have shown reductions in alcohol-related consequences (e.g. Marlatt et al., 1998; Murphy et al., 2004; Wood et al., 2007) while other studies observed no reductions in consequences despite a reduction in alcohol consumption patterns (e.g. Borsari & Carey 2000; Larimer et al., 2001; White et al., 2006). From a public health standpoint, this inconsistency in outcomes warrants further attention.

In the vast majority of feedback-based interventions, consequences related to drinking are assessed among college students using measures such as the Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) or the Young Adult Alcohol Problems Screening Test (YAAPST; Hurlbut & Sher, 1992). The assumption underlying this approach is that more often than not, individuals will try to avoid experiences they deem unpleasant, such as the experience of a negative consequence from drinking alcohol. Thus, the consequences are fed-back to students in a non-judgmental manner to allow them to weigh the pros and cons of their drinking behaviors to hopefully “tip the balance” to become motivated to change and avoid high-risk drinking and consequences in the future (Dimeff, Baer, Kivlahan, & Marlatt, 1999; Miller & Rollnick, 2002). Researchers tend to presume students perceive these consequences as negative without further exploration (e.g. Shim & Maggs, 2005). It would seem somewhat unfathomable that individuals would consider consequences such as getting sick and vomiting, blacking out or having a bad hangover to be neutral or positive experiences. However, it is plausible that if individuals experience alcohol related consequences and do not perceive them as negative, or a “con” of their drinking, using them in feedback sessions may not help “tip the balance” of changing drinking behavior. Furthermore, if individuals perceive alcohol consequences in a positive manner, including them in feedback sessions may promote future drinking and result in iatrogenic effects. The possibility that consequences are not necessarily perceived as negative may also serve to explain findings that despite experiencing alcohol related consequences, college students continue to drink in a high risk manner (Mallett, Lee, Neighbors, Larimer, & Turrisi, 2006).

It is unclear whether college students consistently define alcohol related consequences as negative experiences and how students’ perceptions of consequences relate to their drinking patterns. Therefore, the focus of this research is to understand how college students perceive alcohol related consequences and how these perceptions relate to drinking patterns in order to further explore their usefulness as a component of feedback-based interventions. In addition, it is unclear if there are individual differences due to gender or specific student group affiliations (i.e. Greek organizations) that are related to students’ evaluations of alcohol related consequences. Specifically, this study examined college students’ evaluative ratings of the consequences they have personally experienced as well as how the evaluative ratings related to gender, Greek affiliation, and drinking patterns.

2. Methods

2.1 Participants

Participants were 341 freshman students from a large, public university in the northeast. Respondents completed measures on alcohol consumption, alcohol-related consequences, and how they experienced each alcohol-related consequence (if endorsed). The mean age was 18.5 (SD = .50), with 55.1% identifying as female. Twenty percent (N = 69) of participants reported being affiliated with a Greek organization. The ethnic distribution of the sample was 85.9% whites, 5.6% Asian, 2.1% African American, 2.9% Hispanic/Latino, 2.1% Multiracial, and 1.5% "Other."

2.2 Procedure

An email invitation to an online, confidential survey was sent to 650 randomly selected college freshmen from the university registrar's database during the spring semester of 2007. The invitation described the study, and included a URL and Personal Identification Number (PIN) to access the survey. Students who accessed the survey were first presented with an informed consent statement; those who consented were directed to the actual survey. Participants were compensated \$20 for their time and a 55.5% response rate was observed.

2.3 Measures

Alcohol Consumption—Alcohol use was measured with the *Daily Drinking Questionnaire* (DDQ; Collins, Parks, and Marlatt, 1985), which asks participants to report the typical number of drinks they consume on each day of the week. The DDQ was summed and was used to assess participants' typical weekly drinking patterns during the past three months.

Alcohol-Related Consequences—*The Young Adult Alcohol Problems Screening Test* (YAAPST; Hurlbut and Sher, 1992) was used to assess alcohol-related consequences experienced by participants. Answer choices ranged from *No, never* to *40 times or more in the past year*. We also included 12 additional consequences that could result from drinking constructed from a small focus group (n = 10) comprised of undergraduate students representative of the sample population and alcohol researchers (see Table 1).

Evaluative Ratings of the Consequences—If participants endorsed experiencing an alcohol-related consequence in the past year, they were asked to think about the most recent occasion in which the consequence occurred and then further asked: "How positive or negative was this experience?" This item was rated on a five-point Likert scale anchored by *Extremely Negative* to *Extremely Positive*.

Demographics—Participants were asked to provide their age, gender, year in school, and ethnicity.

3. Results

3.1 Statistical Analysis

The purpose of the analyses was to examine college students' evaluative ratings (*Extremely Negative* to *Extremely Positive*) of consequences they have personally experienced and the association of these ratings with drinking patterns. First, we excluded consequences that were experienced by fewer than 10% of the sample. This yielded 16 alcohol consequences that were subjected to further analyses (the numbers of students who experienced each consequence at least once during the past year are provided in Table 2). The evaluative ratings data were collapsed into a three-point Likert scale (i.e., *Negative*, *Neutral*, and *Positive*) for ease of

interpretation. As a heuristic for interpreting the evaluation of the consequences, we organized three mutually exclusive categories based on the following criteria: A) *Category I - Frequently Rated as Negative*, consisted of consequences that were rated negatively by the majority of participants (50% or more) and rated positively by fewer than 10% of the sample; B) *Category II - Less Frequently Rated as Negative*, consisted of consequences that were rated negatively by the majority of participants (50% or more), but also rated positively by greater than 10% of the sample; C) *Category III - Infrequently Rated Negative*, consequences were rated negatively by less than the majority of participants as well as being perceived as positive or neutral by greater than 50% of the sample.

Second, we used Pearson's Chi-Square to test for rating differences for each of the consequences by gender (males vs. females) and also by Greek membership (yes vs. no). A Bonferroni correction was used to reduce the risk of increased experimentwise Type I error resulting in a p -level set to .003 (.05/16 consequences). These results revealed no significant gender or Greek-affiliation differences for the evaluation of these consequences.

3.2 Category I Consequences: Frequently Rated as Negative

Nine items meeting criteria for being frequently rated as negative included getting arrested and/or receiving an alcohol citation; having your belongings stolen after drinking; receiving a lower grade on an exam or paper; experiencing regretted sexual situations because of drinking; becoming sick after drinking (i.e., vomiting); losing your belongings after a night of drinking; becoming rude/obnoxious/insulting after drinking; and being either physically or socially embarrassed (see Table 2). It is important to note that only the negative consequence of "receiving a lower grade on an exam or paper" had no positive ratings. Despite being rated as negative by the large majority, a small percentage of respondents experienced these consequences as positive and for most of them at least 10% of participants rated them as being neutral.

Lastly, examination of the relationship between evaluations and drinking revealed that positive evaluations of vomiting ($r = .29, p < .01$) and regretted sexual experiences ($r = .26, p < .05$) were associated with higher typical weekly alcohol consumption (see Table 3).

3.3 Category II Consequence: Less Frequently Rated as Negative

Two items meeting criteria for being less frequently rated as negative were experiencing a blackout and being late to class or work because of drinking the night before (see Table 2). By definition, these consequences were rated positively by greater than 10% of the sample, but they were also rated as neutral by over 30% of the sample.

Examination of the relationship between evaluations and drinking revealed that more positive perceptions of being late to work or class ($r = .31, p < .01$) and blackouts ($r = .21, p < .01$) were associated with higher typical weekly alcohol consumption (see Table 3).

3.4 Category III Consequences: Infrequently Rated Negative

Five items meeting criteria for being infrequently rated as negative were: having a hangover; waking up in someone else's bed after a night of drinking; leaving a party alone after a night of drinking; binge-eating late at night after drinking; and skipping an evening meal after drinking the night before (see Table 2). By definition, these consequences were rated positively by greater than 10% of the sample (in most cases greater than 25% of the sample), and they were also rated as neutral by over 40% of the sample in all but one instance.

Finally, correlations were computed between the original five-point Likert evaluative ratings of the consequences and typical weekly alcohol consumption (see Table 3). These analyses

revealed higher typical weekly alcohol consumption was significantly correlated with positive perceptions of experiencing hangovers ($r = .22, p < .01$) and skipping evening meals ($r = .25, p < .05$).

4. Discussion

Despite the research suggesting feedback based interventions are useful in reducing high risk drinking, Walters & Neighbors (2005) pointed out the lack of knowledge about which were the most useful components of the feedback. Since negative consequences are both a component and outcome measure of feedback interventions and have shown mixed findings in the literature, we felt they warranted a closer examination. The current study evaluated how students actually perceive alcohol related consequences by assessing how negatively or positively college students rated the consequences they personally experienced. Furthermore, the relationship between alcohol consumption rates, demographic variables (gender and Greek membership) and perceptions of experienced consequences was evaluated.

College students ranged on their perceptions of consequences and described several consequences as neutral and positive experiences. Less than half of individuals who experienced hangovers, waking up unintentionally in someone else's bed, or left a party alone rated these consequences as negative. Furthermore, nearly half of individuals who reported blackouts, physical, and/or social embarrassment as a result of drinking described the experience as neutral or positive. While some consequences were primarily endorsed as negative (e.g. alcohol citations, belongings stolen, received a lower grade) no consequence was unanimously perceived as negative. Surprisingly, some consequences were described as positive by a substantial portion of participants. Twenty-five percent of individuals who experienced hangovers described them as positive. The same was true with 12% of respondents who had a recent blackout. In addition, heavier drinkers perceived some specific consequences as being less negative and more positive experiences. This pattern was observed when examining more of the frequently experienced consequences such as hangovers, blackouts, and vomiting. More disturbingly, we also found a similar pattern with regard to regretted sexual experiences.

One potential reason for these findings is that individuals believe experiencing certain consequences (e.g. hangovers) are part of the overall drinking experience and balance these "negative" consequences with the positive consequences they experience. Positive consequences of drinking have largely been understudied in conjunction with negative consequences despite their relevance in individuals' decisions to drink. Studies have shown college students report more positive consequences related to drinking compared to negative consequences (Park, 2004) and it is unclear how positive consequences factor into individuals' assessments of "negative" alcohol related consequences.

It is notable that no significant relationships between demographic variables (i.e. gender, Greek affiliation) and evaluation of consequences were observed. Women and men did not show significant differences in the way they evaluated consequences which is consistent with past research examining gender differences related to reported sexual coercion and consequences among college students (Larimer, Lydum, Anderson, & Turner, 1999). We were slightly surprised that individuals affiliated with Greek organizations were not significantly different from non-Greeks in how they evaluated consequences. Individuals involved in Greek organizations are among the highest risk individuals on college campuses for engaging in risky drinking and experiencing consequences (Turrissi, Mallett, Mastroleo, & Larimer, 2006) and may have more exposure to norms that promote alcohol use and focus on many of the positive aspects of drinking while downplaying the negative consequences. Despite this, the current

study suggests the findings generalize across the general student population and are not specific to a particular group.

The findings of the current study highlight an important issue regarding the use of “negative” consequences in feedback interventions. First, individuals who experience alcohol related consequences and perceive them as neutral or positive experiences may quickly dismiss the negative outcomes of drinking when presented to them on the feedback sheet. This may potentially reduce the impact of the intervention. If the feedback is presented in the context of an in-person session, a skilled counselor may be able to address these inconsistencies and reframe some individuals’ experiences using Motivational Interviewing skills (Miller & Rollnick, 2002) and by providing alcohol information (e.g. what a blackout is and how it impacts the body). Furthermore, a counselor who is trained to deliver the intervention will also be able to focus on consequences the individual perceives as negative in order to “tip the balance” of ambivalence and promote safer drinking practices. These findings emphasize the importance of exploring individuals’ perceptions of consequences during the feedback intervention as opposed to merely listing and pointing out their reported experiences with alcohol related consequences. In addition, these findings bring up the question of whether or not consequences should be included on computerized and mailed feedback. Individuals who receive computerized or mailed feedback do not meet with a counselor to discuss the feedback and it is unclear whether consequences weaken or strengthen the intervention if they are presented without a conversation. The current study demonstrated that heavier drinkers tend to perceive some alcohol consequences as more neutral or positive experiences, therefore great care should be taken when delivering the intervention to these individuals.

It is important to note, that while inconsistencies between college students’ and researchers’ perceptions of consequences may contribute to differences in significant versus non-significant reductions in alcohol related consequences across studies, there could be additional reasons for these mixed findings. First, different measures were used across studies to assess negative consequences, such as the RAPI (White & Labouvie, 1989), the YAAPST (Hurlbut & Sher, 1992), and to a lesser extent, the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant 1993). In addition, the delivery of the interventions also varied in that some were delivered via computerized feedback (e.g. Neighbors et al., 2004; Neighbors, Lewis, Bergstrom, & Larimer, 2006; Walters et al., 2007) mailed feedback (e.g. Larimer et al., 2007); in person using one 45-minute session (e.g. Borsari & Carey, 2000; Larimer et al., 2001; Marlatt et al., 1998) or in person using multiple sessions (e.g. Barnett et al., 2007). Finally, the content of the feedback interventions also varied in that the majority of feedback interventions incorporated the negative alcohol related consequences endorsed in the baseline surveys (e.g. BASICS; Dimeff et al., 1999) while some interventions only provided participants with normative feedback information (e.g. Neighbors et al. 2004).

There are a few limitations of the current study that should be addressed. First, this study did not assess RAPI consequence items. RAPI items may be perceived consistently more negative than YAAPST items, however based on the present findings, we hypothesize a similar pattern of findings would emerge. Second, the current study did not assess the context surrounding individuals’ perceptions of consequences so we cannot address the reasons why individuals rated certain consequences as positive or neutral.

Future research focusing on individuals’ perceptions of alcohol related consequences and the role consequences play as a component of the feedback intervention is needed. Typically, consequences are measured globally in follow-up assessments, and it is unclear whether individuals who receive the intervention continue to experience the same consequences repeatedly. Individuals may not take steps to reduce the risk of experiencing consequences they do not find aversive, and therefore may not change certain patterns of drinking behavior.

Therefore, assessing alcohol related consequences alone is not sufficient and it is necessary to understand students' perception of whether or not a consequence is actually negative. In addition, as feedback interventions become more frequently administered via computer it is important to evaluate how the loss of a counselor impacts individuals' perceptions of the pros and cons of drinking. Future studies need to examine how presenting consequences in this manner impacts the overall efficacy of the feedback in reducing the experience of future consequences.

Despite the numerous efforts aimed at reducing college student drinking, relatively few strategies have received empirical support (Larimer & Cronce, 2002, 2007). Although some interventions show promise and prevention efforts geared at first year college students are increasingly implemented on campuses, college student drinking has not declined (Borsari, Murphy, & Barnett, 2007; Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). While some interventions have shown promising results in reducing harmful drinking, they have potential to be improved upon and strengthened. By examining individual components of interventions as well as dosage and delivery issues, we can potentially make a stronger impact in reducing high risk drinking behavior and related problems. The present study began to address this complex issue by examining whether we are accurately assessing college students' perceptions of alcohol related consequences. Findings revealed the need for a closer examination of individuals' perceptions of experiencing alcohol related consequences and how these are related to behavior change in the context of a feedback intervention.

Acknowledgments

This research was supported by grant AA 12529 to R. Turrissi from the National Institute on Alcohol Abuse and Alcoholism.

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Table 1
Additional Alcohol Related Consequences

Have you ever smoked cigarettes because you were drinking?
Have you ever taken illegal drugs because you were drinking?
Have you ever been embarrassed physically (e.g., falling in public) because of your drinking?
Have you ever been embarrassed socially (e.g., revealing personal information) because of your drinking?
Have you ever urinated on yourself because of your drinking?
Have you ever unintentionally woken up somewhere other than your own bed after a night of drinking?
Have you ever gotten kicked out of a party because of drinking and/or other behavior?
Have you ever left a party with people you did not know because you had been drinking?
Have you ever left a party alone when you had originally planned not to because you had been drinking?
Have you ever eaten a large amount of food late at night after you had been drinking?
Have you ever had your belongings stolen (e.g., purse, cell phone, etc.) while you had been drinking?
Have you ever lost personal items (e.g., purse, cell phone, etc.) while you had been drinking?

Table 2

Frequencies of Consequence Ratings

Consequence	Negative (%)	Neutral (%)	Positive (%)	N ^a
Category I				
Arrested/Citation	37 (92.5%)	2 (5.0%)	1 (2.5%)	40
Belongings Stolen	30 (90.9%)	1 (3.0%)	2 (6.1%)	33
Received Lower Grade	42 (87.5%)	6 (12.5%)	0 (0%)	48
Regretted Sex	62 (83.8%)	9 (12.2%)	3 (4.1%)	74
Vomit	168 (76.7%)	31 (14.2%)	20 (9.1%)	219
Lost Belongings	40 (75.5%)	9 (17.0%)	4 (7.5%)	53
Rude/Obnoxious	78 (60.5%)	44 (34.1%)	7 (5.4%)	129
Physically Embarrassed	65 (57.5%)	42 (37.2%)	6 (5.3%)	113
Socially Embarrassed	45 (51.1%)	37 (42.0%)	6 (6.8%)	88
Category II				
Blackout	95 (53.4%)	62 (34.8%)	21 (11.8%)	178
Late to Work or Class	49 (53.3%)	32 (34.8%)	11 (12%)	92
Category III				
Hangover	112 (47.3%)	66 (27.8%)	59 (24.9%)	237
Awoke in Another's Bed	23 (41.8%)	23 (41.8%)	9 (16.4%)	55
Left Party Alone	24 (38.7%)	31 (50%)	7 (11.3%)	62
Binge-Eating	32 (16.8%)	107 (56.0%)	52 (27.2%)	191
Skipped Evening Meal	12 (16.4%)	42 (57.5%)	19 (26%)	73

^aNumber of participants who endorsed experiencing each consequence within the past year.

Table 3

Correlations between Typical Weekly Drinking and Ratings of Consequences

Consequence	Typical Weekly Drinking (DDQ Sum)	N ^a
Category I		
Vomit	.29 **	217
Regretted Sex	.26 *	74
Category II		
Late to Work or Class	.31 **	90
Blackout	.21 **	176
Category III		
Skipped Evening Meal	.25 *	72
Hangover	.22 **	235

^a Number of participants who endorsed experiencing each consequence within the past year.

*
 $p < .05$

**
 $p < .01$