The Effect of Brief Advice on the Use of Alcohol Mixed with Energy Drinks in College Students

Honors in Psychology Project

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Abstract

This study tested the hypotheses that a Brief Advice intervention would significantly (a) reduce the use of alcohol and alcohol mixed with energy drinks (AmED) if such substances were already in use, (b) reduce the initiation rates of alcohol and AmED among students who reported abstaining at the initial assessment, (c) reduce negative consequences associated with drinking, and (d) increase the use of protective behavioral strategies. Participants (predominantly White college freshmen; $N = 187$) completed measures of drinking and related behaviors 4 weeks after the semester began. Half were randomly assigned to immediately hear a lecture containing advice about safer drinking, including specific recommendations about AmED. All participants were reassessed 8 weeks later. The results were nonsignificant, but some were in the predicted direction while others were unexpected. Although brief advice may not be effective for non-mandated college students, additional studies should test whether it may benefit those with existing alcohol-related problems.

The Effect of Brief Advice on the Use of Alcohol Mixed with Energy Drinks in College Students

The use of alcohol by college students has become an accepted part of coming of age; the age of traditional college students corresponds with lifetime peaks in heavy drinking episodes (Reich & Goldman, 2012). Prevalence of alcohol consumption in college students reached 82% in 2012, according to Kilmer and Bailie (2012), with over 65% reporting having been drunk in the past year. In fact, an estimated 20% of college students meet the criteria for an alcohol use disorder (AUD), a diagnosable medical condition in which one's drinking causes distress or harm (National Institute on Alcohol Abuse and Alcoholism, 2016).

According to Kilmer and Bailie (2012), the American College Health Association reported that 22% of students said they did something they later regretted, 19% forgot where they were or what they did, almost 11% had unprotected sex, and nearly 11% had physically injured themselves as a result of drinking within the past 12 months. In addition to social consequences, heavy alcohol consumption can interfere with students' academic goals. Nearly 25% of students who drink report missing class, doing poorly on exams, and achieving a lower overall grade point average

Unfortunately, a simple alcoholic beverage is not the only threat to college populations as the use of alcohol mixed with energy drinks (AmED) is on the rise. Prior to November 2010, multiple premixed AmEDs, such as Four Loko and Sparks, were prominent on the market, but this was also the time that their risks led to raised health concerns at the Food and Drug Administration (FDA). After investigating, the FDA determined that caffeine as a separate ingredient was an unsafe food additive when combined with alcohol and communicated with four companies that made caffeinated alcoholic beverages in order to warn them of the safety

concerns (U.S. Food and Drug Administration, 2010). As a result, the manufacturers of multiple premixed AmEDs voluntarily ceased the production and sale of these products.

Though it may seem that the issue of AmED had been resolved, that was not the case. In place of the premixed AmEDs, cocktails combining alcohol and energy drinks, such as vodka and Redbull and Jäger Bombs (Jägermeister combined with RedBull), have become the new trend in many bars and nightclubs. AmED use is higher among younger drinkers, possibly because the sugary taste of energy drinks masks the unpleasant taste of distilled spirits (Marczinkski, Grant, & Grant, 2009). According to Berger, Fendrich, and Fuhrmann (2013), AmED consumers are more likely than alcohol-only consumers to be heavy episodic drinkers. AmED consumption is also associated with greater quantity of alcohol consumed during a single episode when compared to episodes where alcohol is consumed alone (Velazquez, Poulos, Latimer, & Pasch, 2012). This increased intake of AmED may be the result of caffeine blocking the neurotransmitter adenosine's receptors. Elevation in adenosine activity after drinking results in sedation, but caffeine counteracts this phenomenon. Thus, the body remains stimulated by the caffeine in AmED and does not feel sluggish from intoxication (Fredholm, Battig, Holmén, Nehlig, & Zvartau, 1999).

As the body is continuously being stimulated by the caffeine in AmEDs, the risks of drinking-related problems continue to rise. Individuals using AmED rather than alcohol alone are more likely to be injured (Brache & Stockwell, 2011), use illicit drugs (Snipes & Benotsch, 2013), engage in risky sexual behaviors (Miller, 2012), and be involved in high-risk traffic behaviors (Brache & Stockwell, 2011), such as driving while intoxicated. In a study by Marczinski, Fillmore, Henges, Ramsey, and Young (2013) that examined alcohol-induced priming (i.e., desire to drink more alcohol), participants that were given a priming dose of

AmED rather than a priming dose of alcohol alone reported higher ratings of their desire to drink. This finding helps explain why AmED often leads to more drinking than alcohol alone.

Though there are many risks associated with alcohol use among college students, there are also many intervention techniques to combat these issues. One of these techniques is individualized brief motivational intervention (iBMI). In previous research on interventions for mandated college students (those who have been arrested for an alcohol infraction or who have violated university alcohol policies), iBMI has been shown to be effective in reducing alcohol use or negative alcohol-related consequences (Hustad et al., 2014). The researchers also found that BMIs that include elements of Brief Alcohol Screening and Intervention for College Students (BASICS) are more effective than BMIs without BASICS (Dimeff, Baer, Kivlahan, & Marlatt, 1999).

Carey, Scott-Sheldon, Carey, and DeMartini (2007) completed a meta-analysis that showed group BMI was less effective than individual BMI. However, due to the lack of staff availability at many universities, there is a need for the efficiency of group-delivered interventions, if they can be as effective as individualized interventions. Hustad et al. (2014) compared iBMI with group brief motivational interventions (gBMI) for mandated college students. The researchers found that the intervention delivery method did not significantly affect the outcome, and both iBMI and gBMI led to reduced peak blood alcohol concentration and negative alcohol-related consequences. Therefore, it is likely that intervention components, rather than the delivery mode, will motivate individuals to change their behavior.

Brief Advice (BA) is a non-personalized intervention that may hold promise for the effective treatment of alcohol problems in college students, especially as a first step in the stepped care model or for students who are not mandated to receive alcohol-related services.

Borsari et al. (2012) assessed 598 mandated students at Time 1 and administered non-personalized BA individually to all of them. Six weeks later, participants were assessed again and 102 participants indicated no risky drinking. Those participants that did not respond to BA were subsequently randomly assigned to a BMI condition or to an assessment-only control group. BMI led to significant reductions in alcohol-related consequences, but not heavy drinking episodes or peak blood alcohol concentration. The researchers concluded that individually delivered BA was sufficient for a substantial subset of their student sample, but to our knowledge, BA has not been tested in a group format.

To date, there have been no interventions to address AmED use among college students, other than policy-level changes, such as the 2010 FDA ban on the sale of premixed AmED beverages. To address this shortcoming in the literature, we used this study to determine if a Brief Advice intervention, delivered in a lecture format to a non-mandated sample of college students, will impact alcohol use, including AmED; consequences associated with alcohol use; and protective behavioral strategies. We measured the relevant variables approximately one month after classes began at Northern Kentucky University. Half of the sample received a Brief Advice presentation immediately following the initial assessment. We returned 8 weeks later to measure the relevant variables again in both groups. We hypothesized that, relative to the measurement-only condition, a Brief Advice intervention will significantly (a) reduce the use of alcohol and AmED if such substances are already in use, (b) reduce the initiation rates of alcohol and AmED among students who report abstaining at the initial assessment, (c) reduce negative consequences associated with drinking, and (d) increase the use of protective behavioral strategies.

Method

Participants

Undergraduate students at Northern Kentucky University enrolled in specific sections of PSY 100 and PSY 333 were asked to participate in this study and received course credit or extra credit for their participation. A total of 187 participants took part in both Time 1 and Time 2 assessments. The mean age was 19.51 ($SD = 2.25$). The majority of the participants (68%) were female; 82% were White/Non-Hispanic, and 64% were freshmen. Most (44%) lived off campus with their parents or on campus (35%).

Materials

Based on their course section, participants were randomly assigned to the experimental (brief advice) group or the control (assessment-only) group. Participants were asked to read a consent form and indicate their willingness to participate. The consent form was collected and kept separate from all other forms (see Appendices 1-2). Participants were asked to provide the last 4 digits of their phone number as well as the month and day of their birthday. This information was used to match their Time 1 responses to Time 2 anonymously (see Appendix 3).

The first scale the participants in both groups at Time 1 received was the Daily Drinking Questionnaire (DDQ) for alcohol use (Collins, Parks, & Marlatt, 1985). The DDQ measures the typical number of drinks students have consumed in the past month (since class started at NKU) and how long they drank during those drinking occasions (see Appendix 4). It provides participants with examples of what one standard drink would equal as beer, malt liquor, table wine, and spirits. The Daily Drinking Questionnaire (DDQ) for caffeine and alcohol use (Lau-Barraco, Milletich, & Linden, 2014) measures the typical number of caffeinated alcoholic drinks in the past month. It also includes examples of those types of beverages, such as energy drinks with alcohol or coffee with alcohol (see Appendix 5). The Brief Young Adult Alcohol

Consequences Questionnaire (B-YAACQ; Kahler, Hustad, Barnett, Strong & Borsari, 2008) measures consequences of drinking in the past month, since class started. It includes items such as "I have passed out from drinking," and "I have had less energy or felt tired because of my drinking" (see Appendix 6). It was followed by the Protective Behavioral Strategies Scale (PBSS; Martens, Pedersen, LaBrie, Ferrier, & Cimini, 2007), which measures how often participants use such strategies. Items are scored on a Likert scale ranging from 1 (*never*) to 5 (*always*) and are divided into three subscales (with example items): Stop/Limited Drinking ("Determine not to exceed a set number of drinks"), Manner of Drinking ("Avoid drinking games"), and Serious Harm Reduction ("Use a designated driver"; see Appendix 7).

Next, participants responded to the demographic questions asking their age, gender, college classification, race, and living situation (see Appendix 8). The control group was debriefed (see Appendix 9) and dismissed. Immediately after completing the measures, the experimental group participants received a presentation illustrating facts about drinking, harm reduction practices, and protective behavioral strategies (see Appendix 10); they were also debriefed and dismissed. Eight weeks later at Time 2, both groups completed all measures again.

Results

To determine if the intervention led to reduced alcohol use, we conducted a Time X Condition (Brief Advice vs. No-Treatment Control) mixed ANOVA. There was a significant main effect for time, $F(1, 185) = 9.60$, $p = .002$. At Time 1, the mean number of drinks per week was .72. At Time 2, the mean number of drinks per week was .56, a 22% decrease for the sample as a whole (see Table 1 for cell means). Neither the main effect for Condition ($F[1, 185] = .08$, $p = .780$) nor the interaction ($F[1, 185] = 2.30$, $p = .132$) was significant.

To determine if the Brief Advice led to reduced use of AmED, we conducted another Time X Condition mixed ANOVA. The main effect for time and the Time X Condition interaction were nonsignificant (*F*s < 1, *ns*), as was the main effect for Condition, $F(1, 185) = 1.87$, $p = .174$. Although the results were nonsignificant, they were surprising; the AmED use in the Control condition decreased by 39%, while use by the Brief Advice group increased by 66% (see Table 1).

To determine if the experimental condition reduced the initiation rates of alcohol and AmED among students who had reported abstaining at the initial assessment, we conducted chi-square tests of independence. No relationship was found between participants who were abstaining from alcohol at Time 1 and Condition, $\chi^2 (1, N = 86) = .21$, $p = .65$. Likewise, no relationship was found between those abstaining from AmEDs at Time 1 and Condition, $\chi^2 (1, N = 137) = 1.40$, $p = .27$.

To determine if negative consequences associated with drinking were reduced as a result of treatment condition, another Time X Condition mixed ANOVA was conducted. No main effects or interactions were significant (all *F*s < 1, *ns*). However, the means were in the expected direction: negative consequences reported by the Brief Advice group decreased by 12% and increased by 4% in the control group (see Table 1).

To determine if the use of protective behavioral strategies increased from Time 1 to Time 2 as a result of condition, a Time X Condition mixed ANOVA was conducted on the PBSS overall mean scores, using only the data from participants who reported at least some drinking at Time 1 ($n = 88$). There was a marginally significant main effect for Condition, $F(1, 86) = 3.73$, $p = .057$, with Brief Advice participants reporting more protective strategies than the control participants (see Table 2). The main effect for Time was nonsignificant, $F(1, 86) = 2.15$, p

= .146, as was the interaction ($F < 1$, *ns*). A similar pattern of results (marginally significant main effect for Condition [$p = .099$ and $p = .077$, respectively] and nonsignificant Time X Condition interaction and main effects for Time) was obtained for the Stop/Limit Drinking and the Serious Harm Reduction subscales of the PBSS (see Table 2). In each case, the Brief Advice participants reported using more protective strategies than the control group participants. Finally, the Manner of Drinking PBSS subscale revealed a marginally significant main effect for Time, $F(1, 83) = 3.30$, $p = .073$, indicating that both groups of participants increased their use of these protective strategies at Time 2 (see Table 2; the Condition main effect and Time X Condition interaction were nonsignificant ($F < 1$, *ns*).

Discussion

This study was conducted to determine the effects of a brief advice intervention on the use of alcohol mixed with energy drinks in college students. We investigated the hypotheses that a brief advice intervention would significantly (a) reduce the use of alcohol and AmED if such substances were already in use, (b) reduce the initiation rates of alcohol and AmED among students who reported abstaining at the initial assessment, (c) reduce negative consequences associated with drinking, and (d) increase the use of protective behavioral strategies. All results directly relevant to the hypotheses were nonsignificant.

Though nonsignificant, some results were interestingly unexpected. When conducting the mixed ANOVA for the number of caffeinated drinks consumed at Time 1 and Time 2, the means increased for the experimental condition and decreased for the control condition. These results could indicate that the participants in the Brief Advice condition were unaware of alcohol mixed with energy drinks before they were exposed to the lecture's coverage of the topic. It is possible

that the knowledge of this type of alcoholic beverage instilled initiative in the participants to experience its effects, which may have influenced their Time 2 data.

It does not come as a surprise that this study did not produce more significant effects. Based on the research of Borsari et al. (2012), brief advice only produced significant results for a subset of their mandated student sample. In additiont, Carey et al. (2007) determined that group brief motivational intervention was less effective than individualized brief motivational intervention. And although Hustad et al. (2014) found that both individualized and group brief motivational intervention were equally effective, both interventions required two sessions – one for alcohol screening and another for feedback. Moreover, all of the previous literature had involved students who were required to attend an intervention due to a prior alcohol-related violation. In contrast, the participants of this study largely represented the spectrum of freshman drinking behaviors.

Based on the results of this study, brief advice in a group format does not appear to be sufficient to reduce the use of AmED in college students, but it raises additional questions about how the delivery of brief advice might be altered to produce significant change. Perhaps a program could be established that encourages individuals to attend on their own time, because they were interested, rather than because they were a member of a class that was asked to participate. Therefore, though the findings of this study were not as expected, they still provide ideas for practical applications.

In this study, we attempted to control as many extraneous variables as possible, but we were unable to eliminate all shortcomings. One threat to the generalizability of this study was the lack of diversity in the participant sample. All participants attended Northern Kentucky University, and all of them were enrolled in the psychology courses chosen for this experiment.

In addition, nearly half of the 187 participants were nondrinkers. It is possible that this study would have produced different results if a larger and more diverse sample of students with drinking problems were accessible. Furthermore, it is possible that the lecture presented to the experimental group informed them about AmED when they had not yet been exposed to it. Curiosity may have resulted in an increase in alcohol mixed with energy drinks the participants consumed.

In conclusion, this study did not provide evidence for the hypotheses. This study is consistent with previous studies in the group interventions have not been as successful as individualized interventions. However, because some results approached significance and because there is a need for the efficiency of group based interventions, it may prove beneficial to alter rather than abandon the brief advice concept.

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Table 1

Time 1 versus Time 2 Means as a Function of Experimental Condition, All Measures of Drinking and Drinking-Related Problems

	Brief Advice Group		Assessment-Only Group	
Measure	Time 1	Time 2	Time 1	Time 2
Drinks per Week	.74[a]	.49[b]	.70[a]	.61[b]
AmED per Week	.21[c]	.34[c]	.18[c]	.11[c]
BYAACQ Total	2.64[d]	2.33[d]	2.77[d]	2.87[d]

Matching superscripts for the same measure indicate nonsignificant differences between means. Different superscripts for the same measure indicate statistically significant differences.

Table 2

Time 1 versus Time 2 Means as a Function of Experimental Condition among Participants Reporting At Least Some Drinking at Time 1, Protective Behavioral Strategies Scale Overall and Subscale Means

	Brief Advice Group		Assessment-Only Group	
Measure	Time 1	Time 2	Time 1	Time 2
PBSS Overall Mean	3.36[a]	3.46[a]	3.13[b]	3.19[b]
PBSS Stop/Limit	3.09[c]	3.25[c]	2.86[d]	2.92[d]
PBSS Manner of Drinking	2.89[e]	3.00[f]	2.78[e]	2.91[f]
PBSS Serious Harm Reduction	4.74[g]	4.68[g]	4.46[h]	4.51[h]

Matching superscripts for the same measure indicate nonsignificant differences between means. Different superscripts for the same measure indicate marginally significant differences.

Appendix 1

Research Participation Informed Consent, Part 1

Principal Investigator: Jozie Banas (banasj1@nku.edu)
Co-Principal Investigator: Perilou Goddard, Ph.D. (goddard@nku.edu), 859-572-5463
Department: Psychological Science

Title of Research Study: Student Drinking Survey, Part 1

This research study is designed to see what your current alcohol drinking practices and attitudes are. A full description of the research will be provided at the completion of the study. If you agree to participate in Part 1 of this study, you will complete several short questionnaires and then participate in an interactive presentation (lecture with audience polling). All of your responses will be ANONYMOUS. The expected length of time to participate in Part 1 is 60 minutes or less.

We will return in 8 weeks to ask you to participate in Part 2 of the study, which will involve filling out several short ANONYMOUS questionnaires. You are not required to participate in Part 2, even if you do choose to participate in Part 1 now.

We do not anticipate that there are any serious risks associated with your participation. It is possible that you may experience some mild emotional distress when thinking about alcohol use and its consequences, but if you experience any distress, we expect that it will be temporary and mild.

Your responses are anonymous; we are the only people who will see your name, and we will only use it to give you credit for your participation; your name will never appear in the data file generated by this study. On the first page of questionnaires, you'll be asked for the last 4 digits of your phone number and the month and day (but not year) of your birth. We'll use this information to match your responses to Parts 1 and 2 (if you choose to participate, that is). This information cannot be traced back to you or linked to your name in any way, thus preserving the anonymity of your responses. Demographic questions (e.g., age, gender, race/ethnicity) cannot be used to identify you as an individual. However, you are free to omit this information if you feel you have unique demographic characteristics that could make you identifiable. Only aggregate (group) data will be used; no individual responses of any kind will ever be used in presentations or publications of this research. The data will be stored securely in electronic form on a password-protected server; the questionnaires themselves will be stored in a locked file cabinet in a locked faculty office. Data will be kept for a minimum of 5 years but no more than 10 years.

You will earn 12 Sona research credits for participating in Part 1 today. If you choose to participate in Part 2 (8 weeks from now), you'll receive 3 more Sona research credits.

Your participation is voluntary, refusing to participate involves no penalty, and you may stop participating at any time without penalty or loss of benefits. Your grade in this course will not be negatively affected if you do not wish to participate in Part 1 of this study because there will be many other opportunities throughout the semester to earn research credits.

If you have any questions, comments, or concerns regarding this project, feel free to contact Dr. Goddard, the co-principal investigator (goddard@nku.edu). If you have questions about your rights as a research participant, please contact the chair of the Institutional Review Board (Philip J. Moberg, Ph.D., 859-572-1913, mobergp1@nku.edu).

Thank you for your participation.
Your signature below indicates that you have read this information and are willing to participate.

Name (please PRINT clearly): _____

Signature: _____

Date: _____

Appendix 2

Research Participation Informed Consent, Part 1

Principal Investigator: Jozie Banas (banasj1@nku.edu)
Co-Principal Investigator: Perilou Goddard, Ph.D. (goddard@nku.edu), 859-572-5463
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We will return in 8 weeks to ask you to participate in Part 2 of the study. You are not required to participate in Part 2, even if you do choose to participate in Part 1 now.

We do not anticipate that there are any serious risks associated with your participation. It is possible that you may experience some mild emotional distress when thinking about alcohol use and its consequences, but if you experience any distress, we expect that it will be temporary and mild.

Your responses are anonymous; we are the only people who will see your name, and we will only use it to give you credit for your participation; your name will never appear in the data file generated by this study. On the first page of questionnaires, you'll be asked for the last 4 digits of your phone number and the month and day (but not year) of your birth. We'll use this information to match your responses to Parts 1 and 2 (if you choose to participate, that is). This information cannot be traced back to you or linked to your name in any way, thus preserving the anonymity of your responses. Demographic questions (e.g., age, gender, race/ethnicity) cannot be used to identify you as an individual. However, you are free to omit this information if you feel you have unique demographic characteristics that could make you identifiable. Only aggregate (group) data will be used; no individual responses of any kind will ever be used in presentations or publications of this research. The data will be stored securely in electronic form on a password-protected server; the questionnaires themselves will be stored in a locked file cabinet in a locked faculty office. Data will be kept for a minimum of 5 years but no more than 10 years.

You will earn 12 Sona research credits for participating in Part 1 today. If you choose to participate in Part 2 (8 weeks from now), you'll receive 3 more Sona research credits.

Your participation is voluntary, refusing to participate involves no penalty, and you may stop participating at any time without penalty or loss of benefits. Your grade in this course will not be negatively affected if you do not wish to participate in Part 1 of this study because there will be many other opportunities throughout the semester to earn research credits.

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Thank you for your participation.
Your signature below indicates that you have read this information and are willing to participate.

Name (please PRINT clearly): _____

Signature: _____

Date: _____

Appendix 3

Student Drinking Survey, Part 1

The numbers below will be used to match your Part 1 surveys with surveys administered eight weeks from now (Part 2). These numbers cannot be traced back to your name and cannot be used to identify you as an individual. They will only be used to match Parts 1 and 2.

Please provide the last 4 digits of your phone number: ___ ___ ___ ___

Please provide the month and day (but NOT the year) of your birthday (for example, if your birthdate is April 7, you would write 04 for the Month and 07 for the Day)

Month (01 through 12): ___ ___ Day (1 through 31): ___ ___

IMPORTANT: Please keep your answers to the following questions PRIVATE—cover your answers as you move through the surveys, and don't look around at other students' responses. Your answers are YOUR BUSINESS and will remain anonymous when you turn them in. ***Thank you!***

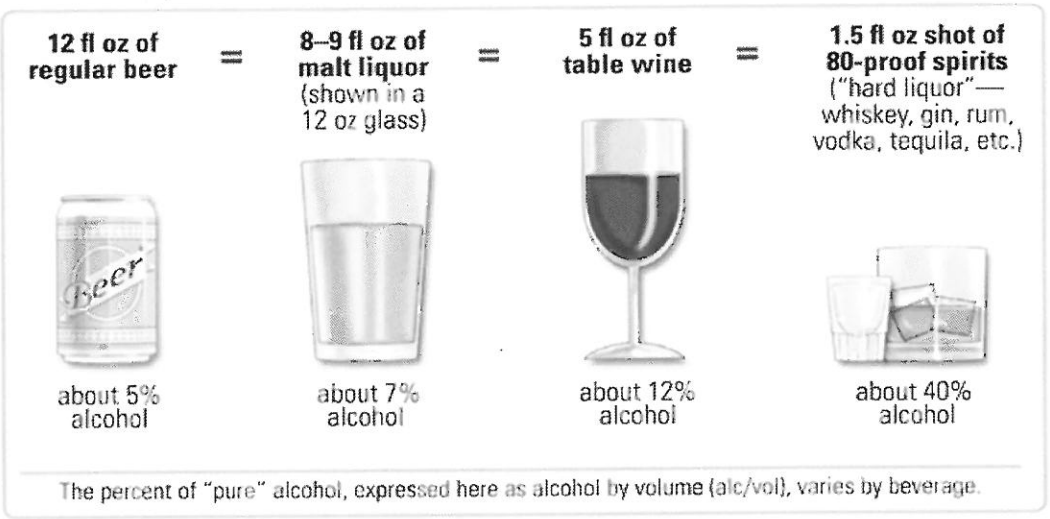
Appendix 4

DDQ – Alcohol Use T1

ALCOHOL USE

Please think about your typical drinking over the **PAST MONTH (since classes started)**. On a typical day, how many drinks would you have, and over how many hours would you have them? That is, how many drinks would you typically have on each day in the past month? How long (in hours) would a typical drinking occasion last on that day? Use any applicable number, starting with 0, and **please note that each space must be filled in**.

NOTE: 1 drink = 1 Beer (12 oz.) = 1 Wine Cooler (12 oz.) = 1 Glass of Wine (5 oz.) = 1 Shot of Liquor (1-1.5 oz.) = 1 Mixed Drink (1-1.5 oz. of liquor)



Over the **PAST MONTH (since classes started)**, on a....

	TYPICAL MONDAY	TYPICAL TUESDAY	TYPICAL WEDNESDAY	TYPICAL THURSDAY	TYPICAL FRIDAY	TYPICAL SATURDAY	TYPICAL SUNDAY
NUMBER OF DRINKS							
NUMBER OF HOURS							

Appendix 5

DDQ - Caffeinated Alcohol T1

The following questions have to do with caffeinated alcohol use. For these questions, please choose the answer that best describes your drinking in the **past month (since classes started)**.

Note: 1 Drink = 1 Energy drink with alcohol (e.g., Red Bull and Vodka; Jager Bomb)
= 1 Pre-packaged caffeinated alcohol (e.g., Caffeinated beer: Sparks, Rockstar; caffeinated liquor – Joose or P.I.N.K.)
= 1 Liquor drink with caffeinated soda (e.g., rum and coke)
= 1 Coffee with alcohol (e.g., Irish Coffee)

Please think about your typical drinking of caffeinated alcohol over the **PAST MONTH (since classes started)**. On a typical day, how many caffeinated alcohol drinks would you have?

Over the PAST MONTH (since classes started), on a....

	TYPICAL MONDAY	TYPICAL TUESDAY	TYPICAL WEDNESDAY	TYPICAL THURSDAY	TYPICAL FRIDAY	TYPICAL SATURDAY	TYPICAL SUNDAY
NUMBER OF DRINKS							

1. How many times (i.e., how many drinks) in the past 30 days did you drink alcohol that was mixed with an energy drink (e.g., Red Bull and vodka)? _____

2. How many days in the past 30 days did you drink alcohol that was mixed with an energy drink (e.g., Red Bull and vodka)? _____

Appendix 6

B-YAACQ T1

Below is a list of things that sometimes happen to people either during, or after they have been drinking alcohol. Next to each item below, please mark an "X" in either the YES or NO column to indicate whether that item describes something that has happened to you **IN THE PAST MONTH (since classes started).**

In the **PAST MONTH (since classes started)…**

		YES	NO
1.	While drinking, I have said or done embarrassing things.		
2.	The quality of my work or schoolwork has suffered because of my drinking.		
3.	I have felt badly about myself because of my drinking.		
4.	I have driven a car when I knew I had too much to drink to drive safely.		
5.	I have had a hangover (headache, sick stomach) the morning after I had been drinking.		
6.	I have passed out from drinking.		
7.	I have taken foolish risks when I have been drinking.		
8.	I have felt very sick to my stomach or thrown up after drinking.		
9.	I have woken up in an unexpected place after heavy drinking.		
10.	I have found that I needed larger amounts of alcohol to feel any effect, or that I could no longer get high or drunk on the amount that used to get me high or drunk.		
11.	My drinking has created problems between myself and my boyfriend/girlfriend/spouse, parents, or other near relatives.		
12.	I have been overweight because of drinking.		
13.	I have neglected my obligations to family, work, or school because of drinking.		
14.	I have spent too much time drinking.		
15.	I have not gone to work or missed classes at school because of drinking, a hangover, or illness caused by drinking.		
16.	I have felt like I needed a drink after I'd gotten up (that is, before breakfast).		
17.	I have become very rude, obnoxious or insulting after drinking.		
18.	I often have ended up drinking on nights when I had planned not to drink.		
19.	When drinking, I have done impulsive things that I regretted later.		
20.	I have often found it difficult to limit how much I drink.		
21.	My drinking has gotten me into sexual situations I later regretted.		
22.	I've not been able to remember large stretches of time while drinking heavily.		
23.	My physical appearance has been harmed by my drinking.		
24.	I have had less energy or felt tired because of my drinking.		

Appendix 7

PBSS T1

Indicate the extent to which you engage in the following behaviors when using alcohol or 'partying'.

	1 Never	2	3	4	5 Always
1. Determine not to exceed a set number of drinks					
2. Alternate alcoholic and nonalcoholic drinks					
3. Have a friend let you know when you've had enough					
4. Leave the bar/party at a predetermined time					
5. Stop drinking at a predetermined time					
6. Drink water while drinking alcohol					
7. Put extra ice in your drink					
8. Avoid drinking games					
9. Drink shots of liquor					
10. Avoid mixing different types of alcohol					
11. Drink slowly, rather than gulp or chug					
12. Avoid trying to "keep up" or out-drink others					
13. Use a designated driver					
14. Make sure that you go home with a friend					
15. Know where your drink has been at all times					

Appendix 8

Demographic Questions T1

This study is anonymous, but your answers to demographic questions may reveal your identity if you have unique identifiers (e.g., you are an 89-year-old Asian male). Please feel free to skip any questions you do not feel comfortable answering or that you believe may reveal your identity.

1. Age _____

2. Gender _____

3. Classification
   - ____ Freshman
   - ____ Sophomore
   - ____ Junior
   - ____ Senior
   - ____ Non-degree seeking
   - ____ Post-baccalaureate

4. Race
   - ____ African American, Non-Hispanic
   - ____ Hispanic/Latino
   - ____ White, Non-Hispanic
   - ____ Asian/Pacific Islander
   - ____ American Indian/Native Alaskan
   - ____ Other

5. What is your living situation since classes started?
   - ____ On campus
   - ____ Off campus by myself
   - ____ Off campus with friends or boyfriend/girlfriend
   - ____ Off campus with parent(s)
   - ____ Other (Please specify: _____)

Appendix 9

Debriefing: "Student Drinking Survey" Research Study, Part 1

Thank you for participating in Part 1 of the "Student Drinking Survey" research study, designed by psychology honors student Jozie Banas and Dr. Perilou Goddard. This research study is designed to assess your current alcohol drinking practices and attitudes. A full description of the research will be provided at the completion of Part 2 of the study.

All questionnaire responses are completely anonymous. Your name will only be used to give you credit in Sona for your participation. There is no way to link your name to the numbers you provided on the first page; those numbers will only be used to match your surveys today with the surveys from Part 2 (coming in eight weeks). The data file generated in this study will NEVER contain any individually identifying information.

You will earn 3 Sona credits for your participation in Part 1 and 3 more Sona credits for Part 2. You are free to decline to participate in Part 2; doing so will not affect the credit you earn for Part 1.

If participating in this study raised any concerns for you about alcohol use or other problems, please consider contacting the NKU Office of Health, Counseling, and Student Wellness, 859-572-5650. They provide help to NKU students and can also refer you to community agencies that may provide help, too. You can also find many community resources by visiting this website: http://hcsw.nku.edu/Resources/community-resources.html

If you have any questions or concerns about your participation, please feel free to contact Dr. Perilou Goddard; goddard@nku.edu.

Thank you very much for your help with this study. We sincerely appreciate your time and effort.

Appendix 10

Safer Drinking

JOZIE BANAS
DEPARTMENT OF PSYCHOLOGICAL SCIENCE

i>clicker Question

According to the most recently available survey (2014), what % of NKU students don't drink at all?

A) 12%

B) 6%

C) 49%

D) 27%

Lots of NKU Students Don't Drink at All

Answer: 27%

The safest drinking is no drinking

If you know people who don't drink, don't hassle them
- In fact, make friends with them!

Lots of NKU Students Don't Drink at All

Lots of good reasons for making this decision
- Health
- Safety
- Saving money
- Don't like the taste
- And many more...

If you don't drink, you still learn some stuff today that will help a friend, so STAY TUNED

i>clicker Question

According to the same survey, what % of NKU students drink no more than once a month?

A) 26%

B) 7%

C) 38%

D) 15%

NKU Drinking Norms

Answer: 26%

So 53% of NKU students either don't drink at all or don't drink often

I'm not here to tell you what to do or not do. I'm just giving you information about how to drink more safely.

But what you do with the info, if anything, is up to you!

Effects of Different Blood Alcohol Concentrations

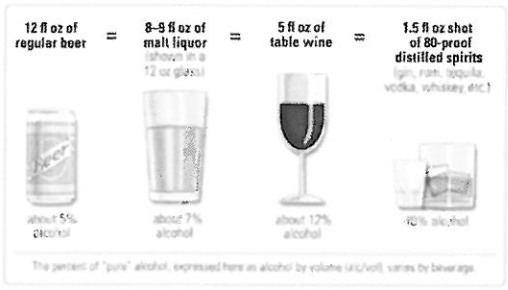
Alcohol is a central nervous system depressant, but its initial effects feel stimulating

Effects are based on blood alcohol concentration (BAC)

- 0.02% BAC: you notice some slight effect
- 0.05%: you feel relaxed (a "good buzz" for most drinkers)
- 0.08%: speech is slurred, muscle coordination is impaired, risk of vomiting increases

To figure out your BAC: Count how many standard drinks you've had in one hour

- 1 standard drink =



- For women, the .05% sweet spot is about 1 to 1 ½ standard drinks
- For men, it's about 1 to 2 ½ standard drinks

Beverage Intake	Female (100 lbs)	Male (100 lbs)	Female (150 lbs)	Male (150 lbs)	Female (200 lbs)	Male (200 lbs)
1 shot spirits 1 glass wine 1 can beer	0.045	0.037	0.03	0.025	0.022	0.019
2 shots spirit 2 glasses wine 2 cans beer	0.090	0.075	0.06	0.050	0.045	0.037
4 shots spirits 4 glasses wine 4 cans beer	0.180	0.150	0.12	0.1	0.090	0.070

Metabolism

Lots of mixed drinks count as more than one standard drink

- One Long Island Iced Tea = 4 standard drinks

Your body can only metabolize about ½ to 1 standard drink per hour

If you keep drinking more than one drink an hour, your BAC will keep going up

What Affects Your BAC?

How much you drink

Alcohol content of what you drink

How fast you drink

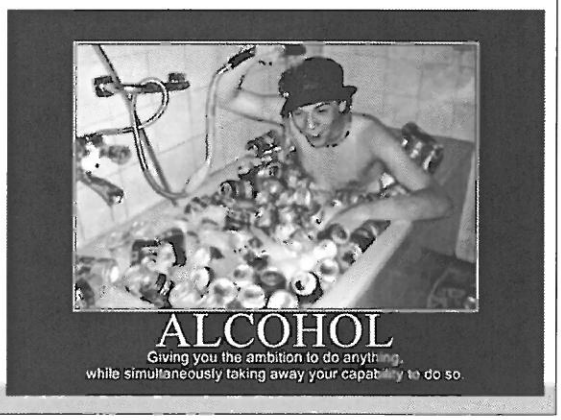
Whether or not you drink on an empty stomach

Your body weight

Your sex (male or female)

Alcohol: More ≠ Better

- Up to a point (around .05% BAC), drinking feels good to many people
- But it's a myth that if some drinking is good, more drinking is better
- After BAC reaches about .05%, you reach a point of diminishing returns



i>clicker Question

What can you do to sober up faster?

A) exercise

B) drink coffee

C) take a cold shower

D) none of the above

Binge Drinking

Definitions:

- For women, 4 or more drinks in a single occasion
- For men, 5 or more drinks in a single occasion

- Drinking to get drunk

i>clicker Question

Which of the following are common negative consequences of binge drinking?

A) missing classes or other stuff because of a hangover

B) throwing up, passing out, or both

C) doing embarrassing things while drinking

D) all of the above

Other Problems Associated with Binge Drinking

Getting into sexual situations you later regret (including unprotected sex and sexual assault)

Driving drunk or riding with someone who's drunk

Getting into arguments or fights

Having blackouts (not remembering stuff you did while you were drunk)

Alcohol Mixed with Energy Drinks

i>clicker Question

Mixing alcohol with energy drinks

A) reduces the chance of a hangover

B) reduces your BAC

C) helps you metabolize alcohol more quickly

D) none of the above

Mixing Alcohol with Energy Drinks: A Really Bad Idea

Examples: Jäger Bombs, Red Bull and vodka

More negative consequences

It seems like the caffeine in energy drinks would help offset some of the bad effects of alcohol

But it turns out that mixing alcohol with energy drinks leads to more negative consequences, including greater risks of

- Drinking and driving
- Having unprotected sex
- Drinking dangerous amounts of alcohol

Safer Drinking Strategies

Strategies for reducing the price you pay for your fun

Some of these strategies may make a lot of sense to you

But remember:

- What you do with this information, if anything, is up to you

i>clicker Question

Safer drinking strategies include:

A) avoiding drinking games

B) alternating alcoholic and nonalcoholic drinks

C) drinking slowly, rather than gulping or chugging

D) all of the above

Strategies for Cutting Down

Switch from stronger drinks (e.g., shots) to weaker drinks (e.g., beer)

Drink more slowly
- AVOID DRINKING GAMES
- Make your drinks last

Alternate alcoholic and nonalcoholic drinks

Think of ways to say "no thanks" when someone offers you another drink

Emphasize QUALITY, not QUANTITY

Avoiding Problems with Alcohol and Sex

- Remember that alcohol may make you want sex more, but it will make sex worse
- Don't leave your drink unattended
- Watch out for friends who may have impaired judgment
  - Arrange ahead of time to have someone you trust tell you when you've had enough and make sure you get home safely

Avoiding Problems with Alcohol and Driving

- Leave your car keys at home
- Uber/Lyft
- Arrange how to get home before
- Choose a reliable designated driver who agrees not to drink at all
- Remember that Kentucky, Ohio, and Indiana have zero-tolerance laws for underage drinkers who are driving

The Bottom Line

Remember, any changes you make are

YOUR CHOICE

But if you choose to drink...

Practice Safer Drinking!

But if you choose to drink

Practice Safer Drinking!