Study Protocol

Timing Personalized Feedback after Alcohol Health Education

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Description and Purpose of the Project

Heavy episodic alcohol use within the college student population is widespread, creating problems for student drinkers, their peers, and their institutions. Negative consequences from heavy alcohol use can be mild (e.g., hangovers, missed classes), to severe (e.g., assault, even death). Although online interventions targeting college student drinking reduce alcohol consumption and associated problems, they are not as effective as in-person interventions. Online interventions are cost-effective, offer privacy, reduce stigma, and may reach individuals who would otherwise not receive treatment. In a recently completed randomized, controlled trial, an emailed booster with personalized feedback improved the efficacy of a popular online intervention (Braitman & Henson, 2016). A second randomized, controlled trial confirmed efficacy for students of legal drinking age for a longer timeline (Braitman & Lau-Barraco, 2018). Although promising, the booster incorporated in the study needs further empirical refinement. In particular, it is not known if boosters are most efficacious if administered when the intervention effect is still strong, or as the intervention effect begins to wane. Thus, an empirical question is the optimal timing of the second dose.. [Findings from Study 2 should elucidate students' peak receptivity by identifying the delivery timing with the highest efficacy.]

Primary Aims

The current project seeks to build on past progress by further developing and refining the booster. In particular, to identify the most efficacious timing for sending the feedback. The content will be similar across conditions, but will be disseminated at different times to identify the most impactful timeline. This study compares booster delivery at 2 weeks after the intervention (known to be effective; Braitman & Henson, 2016; Braitman & Lau-Barraco, 2018) to delivery at week 14 (known to be the window when intervention effects wane based on meta-analysis; Carey et al., 2012), and delivery at weeks 6 or 10 (the midpoints between these two empirically-supported times). A fifth group will receive the booster at all four delivery times as a repeated administration comparison. Finally, an intervention-only control group will also be used. Thus, there will be 6 study conditions: those who receive the emailed feedback 2, 6, 10, or 14 weeks after baseline, or at all of those times, or not at all (control). Thus, the aim of the current study is to identify optimal timing for sending the tailored booster feedback via booster email.

Participant population

Eligible participants must 1) have consumed at least 1 drink containing alcohol within 2 weeks prior to participation; 2) be between the ages of 18-24 years old; 3) must be an undergraduate student at the host institution; and 4) [prior to 3/29/21] were enrolled in classes that were in-person or hybrid [had an in-person component] OR [after 3/29/21] have consumed alcohol in person with others in the past 30 days. Note that this last criterion was developed in response to the COVID-19 global pandemic. Attending classes in person was viewed as a proxy for willingness to gather with others in person, potentially drinking with others in person as well. However, study enrollment was slow, and relatively few students were taking classes in person. Thus, we decided to switch to a more direct assessment of social drinking, including enrolling

online students in the study if they reported drinking alcohol with others in person. Power analyses were conducted using Monte Carlo simulation methods within Mplus (version 5.21, Muthén & Muthén). Effect sizes, variance, and covariances used were based on data from a preliminary study with similar eligibility criteria using the same booster content (Braitman & Henson, 2016; Braitman & Lau-Barraco, 2018). We estimated a retention rate of 76%, the average reported in a meta-analysis of RCTs assessing alcohol interventions for first-year college students (Scott-Sheldon et al., 2014). Monte Carlo simulation methods indicated that for the effect size expected (b = 6.57, β = 0.537) and for the expected 24% attrition, a sample size of N = 180 total students should yield sufficient power (.80+) to detect booster effects.

Recruitment Procedure

An email describing the study is sent to undergraduate students at ODU ages 18-24 who have enrolled in at least 1 credit hour, and includes a link to a screener survey. In addition to eligibility criteria (age, student status, if they drink with others, and alcohol consumed) additional irrelevant questions are included in the screener survey to discourage ineligible participants from re-taking the screener survey with different answers. Eligible participants can provide their contact information (name, email, and phone number) and are linked to Calendly to schedule their participation in the baseline protocol via Zoom.

Study Procedure

Emerging adult college drinkers are recruited via email as described above. After completing the screener to verify eligibility, participants schedule their participation time through an online time management system (Calendly). They receive an email reminder from the Calendly system 24 hours before their assigned timeslot. After participating in the fully remote baseline session via Zoom, participants are be paid $20. They are also be invited to complete follow-up surveys for additional money. Participants are invited to complete 1-, 3-, 6-, and 9-month assessments, and receive $10 for each completed follow-up survey. As an additional incentive, participants who complete all assessments will be given a $10 bonus (yielding a $70 total for the study if all follow-ups are completed). All monetary compensation is provided via online gift card to Amazon.

Baseline: Participants sign on to Zoom via the link provided during their assigned timeslot. Upon signing into the Zoom meeting, the research assistants provide a link (using the chat function) directing them to a Qualtrics survey. Participants read and view videos of the study procedures on the first page of this website. The videos have been created in Powtoon, using voiceover and images that are not related to a specific gender or race/ethnicity. After reviewing the videos, participants are provided with the informed consent document (on a subsequent page of the survey), will have the opportunity to ask questions during the live Zoom session with the research assistant. After consenting to participate, they are directed to complete the baseline survey (approximately 30-45 minutes). All participants will complete this computerized survey that assesses alcohol use, alcohol-related problems, protective behavioral strategies for drinking and their perceived effectiveness, motives and expectancies for alcohol use, anonymized social network characteristics, context of their most recent drinking occasion, marijuana and tobacco use, COVID-19 experiences, internalizing symptoms, and demographic

measures. Through a mechanism of the survey, participants are randomly assigned to one of six possible conditions regarding the timing of receiving emailed personalized feedback about their alcohol use. After completing the initial assessment, participants are then be directed to navigate through the eCHECKUP TO GO program (San Diego State University Research Foundation, 2018) until it is completed (approximately 20-30 minutes).

Subsequent assessments: Approximately 1, 3, 6, and 9 months after the initial assessment, researchers send each participant an email reminding them to complete the follow-up assessment. This email includes a link to an online follow-up survey that assesses alcohol use, related problems, protective behavioral strategies for drinking and their perceived effectiveness, anonymized social network characteristics, context of their most recent drinking occasion, and marijuana and tobacco use. If participants provide additional ways to contact them during the baseline survey (a second email address, a phone number to text), these methods are also used to send the link to the follow-up surveys.

Boosters: After the intervention, participants receive an additional email from the researcher, depending on their study condition. For five study conditions, these emails contain personalized normative feedback about alcohol use as well as feedback about harm reduction strategies, serving as a booster to the original intervention. Baseline data are used to provide students with normative information (e.g., typical drinking among ODU students who are male/female depending on the gender of the recipient), and reminders of protective behavioral strategies they can use to reduce drinking-related harm (separated by strategies they have reported using recently versus those they might consider trying). This is received at 2 weeks, 6 weeks, 10 weeks, or 14 weeks after baseline for study conditions 1-4 respectively. This is received at all of those times for some participations (the 5th study condition). Participants in the control condition (6th study condition) do not receive any feedback via email.

Measures

The same measures are included in baseline and the follow-up surveys:

Participants' **alcohol use** is assessed using a modified version of the Daily Drinking Questionnaire for the past 30 days (Collins et al., 1985). Additionally, participants describe specific aspects regarding their drinking in the past 30 days (e.g., highest consumption in a single day). **Descriptive Norms** are assessed by modifying the DDQ to reflect their expectations for typical male students at the same institution, typical female students at the same institution, and close friends. **Injunctive Norms** are assessed using 10 items (Carey et al., 2010). **Alcohol-related problems** are assessed using the 24-item Brief Young Adult Alcohol Consequences Questionnaire (BYAACQ; Kahler et al., 2005). **Protective behavioral strategy** (PBS) use is assessed using Sugarman and Carey's (2007) Strategy Questionnaire. **Alcohol expectancies** are assessed using the Comprehensive Effects of Alcohol questionnaire (CEOA; Fromme et al., 1993). **Motives for alcohol use** are assessed using the Drinking Motives Questionnaire (DMQ; Cooper, 1994). **Alcohol beliefs** about how salient alcohol use is to college life are assessed using the College Life Alcohol Salience Scale (CLASS; Osberg et al., 2010). Questions about their **Social media use** were created by the researcher. **Social network** and affiliated characteristics are assessed using the adapted version (DeMartini et al., 2013) of the Brief Important People

Interview (BIPI; Zywiak et al., 2002). **Marijuana use** is assessed using recommended best practices (Prince, 2019), and **tobacco use** is assessed using items created by the researcher. **Perceived Importance of Marijuana to the College Experience Scale** (PIMCES; Pearson et al., 2017) is used to assess how salient marijuana is to college life. Questions about participants' experiences with the COVID-19 pandemic were created by the researchers. **Symptoms of depression** are assessed using the short version of the Center for Epidemiological Studies Depression scale (CESD-10; Andresen et al., 1994)**,** altered to reflect the past 30 days. **Anxiety** is assessed using the Generalized Anxiety Disorder 7 (GAD-7; Spitzer et al., 2006), modified to reflect the past 30 days. **Stress** is assessed using the psychological vulnerability subscale of the Perceived Stress Scale – Revised (PSS-R; Wickrama et al., 2013), modified to reflect the past 30 days. **COVID-19-specific stress** is assessed using the COVID-19 Stress measure (Ellis et al., 2020). **Demographics and general information** are assessed during the initial assessment only. Participants report their age, race, sex, Greek affiliation (i.e., membership in fraternities or sororities), GPA, class standing, athletic status student status (full- versus part-time), residential status, relationship status, sexual identity, height, and weight (for blood alcohol content calculations).

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